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MONOGRAPH

OF THE

FAMILY OF NITIDULARIÆ.

BY

ANDREW MURRAY.

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[FROM THE TRANSACTIONS OF THE LINNEAN SOCIETY OF LONDON.]

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XIII. *Monograph of the Family of Nitidulariæ.* By ANDREW MURRAY, Esq., F.L.S.

## Part I.

(Plates XXXII.-XXXV.)

Read April 2nd, 1863.

## INTRODUCTION.

IT is now some years since I agreed, at the request of Dr. Gray of the British Museum, to prepare a catalogue of the *Nitidulariæ* in the Museum, for the purpose of publication as one of the Museum Catalogues.

It was not without hesitation that I undertook the task. The catalogues published by that establishment had been gradually assuming the character of monographs, embracing not only the actual contents of the Museum collection, with descriptions of the new species in it, but also of its desiderata. I therefore felt that, if I undertook the task of arranging and cataloguing the *Nitidulariæ* in the Museum, I was, in fact, undertaking to write a monograph of that family. And this I knew to be no easy task, "no journey of a sabbath day"—loaded especially as I was with numerous other occupations. It implied the microscopic dissection of the parts of many hundred specimens, and the making of careful drawings of these dissections—a work rendered doubly difficult and laborious by the minute size of the insects to be examined. I knew, too, that its results would bear no proportion to the labour bestowed upon it; and what was perhaps more discouraging, I felt that after it was done there were few from whom I could expect an intelligent appreciation of my work.

Still the subject was not without its attractions. It was allied to one (the genus *Catops*) which I had already monographed. It possessed a special interest from its well-defined character, its affinities with other groups, and the variety of form and structure in its genera.

Influenced by such considerations, I accepted Dr. Gray's invitation. I soon found, however, that the mere preparation for the work would take a long time. The collection of *Nitidulariæ* in the British Museum, although large, had great blanks which required to be filled up. The verification of the different types described by previous authors entailed a vast amount of correspondence and the necessity of personally visiting the great museums in the different capitals of Europe. The subsequent examination of the materials begged or borrowed from all quarters took up years. And when at last my work began to assume a shape fitted for the printer, other engagements entered into by the British Museum, which had precedence of mine, prevented its being then sent to press. On my part other duties by-and-by took up the whole of my time and made me look upon the delay, if not with satisfaction, at least without regret; and it was only in the course of the present winter, when I began again to have a little leisure, that,

looking to the uncertainty of human life, I thought it would be well if the information I had accumulated were put beyond the reach of casualties.

Finding from my friend Dr. Gray that it was still uncertain when the Museum might be able to publish my manuscript, I, with his approval, resolved to offer to transfer it to this Society, as likely to bring it out more speedily, should it seem to the Council worthy of that honour.

So much for the origin of this paper. The next point which I should wish to advert to is the materials I have had to work with. This is of some importance, as showing the degree of pains bestowed in perfecting it, and the probable proportion of accessible materials which have been embodied in it. In the first place, then, the Monograph contains the results of examinations of the whole of the specimens in the British and Oxford Museums, of those in the Jardin des Plantes (including Blanchard's and D'Orbigny's types), of those in the Copenhagen Museum, in the Berlin Museum (including Erichson's types), and in the Stockholm Museum (including Bohemann's). It contains those in the private collections of Dr. Leconte of Philadelphia (including the types of his species), those in the collections of the Marquis de Laferté-Sénectère (including Dejean's collection), Chevrolat, Marseuil, Javet, Guérin-Ménéville, Fairmaire, Brissot, Chabrillac, Sallé, Deyrolle, Bonvouloir, and most of the other Parisian entomologists, of Lacordaire and Candèze in Belgium, of Schiödte and Westermann at Copenhagen, of Förster at Aix-la-Chapelle (including the types of his species of *Meligethes*), of Riel at Cassel, of Haage and Heyden at Frankfort, of Bruck at Crefeld, of Dohrn at Stettin, of Gerstäcker, Kraatz and Schaum at Berlin (including Germar's types), those of Kiesenwetter at Bautzen, of Obert and Motschoulsky at St. Petersburg, of Märkel at Dresden, of Rosenhauer at Erlangen, of Sturm at Nuremberg (including his types), and of our own chief coleopterists in Britain—Westwood, Saunders, Waterhouse, Parry, Hamlet Clark, Pascoe, Fry, &c. The veteran Wm. Sharpe M'Leay has contributed of his stores in Australia; Mr. Nietner made for me an admirable collection of *Nitidulariæ* in Ceylon; Count Castelnau and Dr. Traill at Siam and Singapore, Mr. Bowring in China, Mr. Hepburn in California, Mr. Wedderspoon in Chili, Dr. Jameson at Quito, and the Hudson Bay Company's officers in the north of America, all kindly added to my materials. Mr. Bates's entire collection of *Nitidulariæ* made on the Amazon was secured for the Museum, as was that of Mr. Wallace made in Celebes, Batchian, and the other places he visited; and the chief dealers in insects, Messrs. Stevens, Deyrolle, &c., preserved for me whatever novelties came into their hands. To numerous other less-known entomologists I owe thanks for their liberal contributions. These have enabled me to do much to increase the collection of the British Museum. To fill its blanks I have also sacrificed my own unique specimens wherever they were required for that purpose; so that it has now become the finest and best collection of this family in the world. One chief value which it possesses is due to my having obtained authentic types of described species from the original describers themselves wherever it was possible. To Professors Peters, Gerstäcker, and Schaum I owe types of a large proportion of Erichson's species. Boheman has given me types of most of his Caffrarian described species. Förster and Rosenhauer gave me their species of *Meligethes*, and Leconte has sent me his newly described Californian and other American

species. There are thus not very many species to see authentic types of which it would now be necessary for the student to go beyond the walls of the British Museum.

An estimate of the relative strength of the Museum in this family may be made from a comparison of the numbers it possesses with those possessed by the Berlin Museum, which, before I took the monograph in hand, was far ahead of every other collection, and which is now second only to the British Museum. Of the genus *Carpophilus* there have been thirty-five species previously described; the Berlin Museum possesses thirty-five species, while the British Museum has sixty-two species, and I describe ninety-three. Of the genus *Brachypeplus* five species have been described, of which four are in the Berlin Museum; I describe twenty-eight, of which twenty-three are in the British Museum. Of *Colastus* eighteen species have been described; the Berlin Museum contains nineteen, the British Museum twenty-eight, and I describe forty-seven: and other genera in like proportion.

In subdividing this family, I have found it necessary to make the characters of many of the genera, and especially of the subgenera, to a greater or less extent artificial. If genera really did exist in nature, we ought to be able to find positive and defined characters by which to distinguish them. That we do not find any limiting boundaries, goes far to prove that there are no such things as genera in nature, and that what we call so are neither more nor less than artificial aids to memory and classification. In no family which I have studied have I been more struck with this than in the *Nitidulariæ*. The affinities which we find constantly appearing in unexpected places, and the gradual shading off which we see in others, show that the whole group is a perfect network of relationship, and that, with a few exceptional breaks, the boundaries of the genera, or subsections into which for convenience' sake we divide them, have no real existence. It is no part of my present purpose to discuss the question whether genera and species actually do exist or not. It may be that the larger divisions, such as our present families, which were first described as genera by Linnæus and the older naturalists, *have* limits which (subject to the usual exceptions which occur in all systems) are sufficiently well defined and constant to allow of their being regarded as boundaries laid down by nature and not by man; and there is no doubt that the characters of these larger divisions or old genera are much better marked (as, of course, they ought to be) than those of the more numerous smaller subdivisions proposed by modern naturalists; but when we come to the smaller sections I have almost invariably found that some inosculating passage or other links the whole together, not in a chain or series, but in a complete network.

The purpose of this monograph is not antiquarian but practical. I shall therefore not occupy—I must not say waste—time in recapitulating the early notices of the species composing it. Practically they are now of little value, and it will sufficiently answer every useful purpose to give references to them in the body of the monograph wherever they are necessary for the elucidation of the different species. Nor need the more recent literature of the subject, although very different in value, occupy us long: it is as scant in quantity as it is excellent in quality.

The species which now compose the family were originally arranged by De Geer and

Linnæus among the *Silphidæ*. Fabricius threw them, and a number of other species which are now to be sought in distant parts of our systematic arrangements, into one genus under the name of *Nitidula* (a diminutive of *nitidus*)—an appellation not very appropriate considering the obscure colouring and sordid appearance of many of the species, but which has been retained, notwithstanding an early attempt of Laicharting (Verz. Tyrol. Ins., Zür. 1781), in which he was followed by Schönherr, to get it changed (to *Ostoma*).

Latreille, Herbst, Kugellan, Leach, Stephens, Shuckard, Laporte, Fischer, Perty, &c. from time to time broke up the genus, or added new genera to the family, as fresh materials were discovered. To them we owe the genera *Cateretes*, Herbst (*Cercus*, Latreille); *Brachypterus*, Kugellan; *Carpophilus*, Leach and Stephens; *Cillæus*, Laporte; *Psilotus*, Fischer; *Pria*, Stephens (*Cormyphora*, Laporte); *Meligethes*, Stephens; *Lasiodactylus*, Perty; *Strongylus*, Herbst; *Cychramus*, Kugellan; and *Cryptarcha*, Shuckard. But it was not until the year 1843 that it underwent a special examination. In that year Erichson published, in Germar's 'Zeitschrift für die Entomologie,' a monograph of the family, which has been ever since and still remains the standard work on the subject; and perhaps no better proof of its excellence and ability could be given than the fact that during the lapse of nearly twenty years, most fertile in the progress of entomology, which have passed since that publication, no subsequent author has found, nor do I now in my turn (with the added experience of all that time) find, anything to alter in the general principles of his classification. The main divisions which he has laid down seem the best which can be adopted, and I have little more to do than to fortify them by additional characters, correct their boundaries where imperfect information had led Erichson into error, and add to the species contained in them the new discoveries which have accumulated since the publication of his work, and establish new genera for the new forms for which a place cannot be found in the old.

The new "*coupes*" which Erichson made in his monograph were the following genera:—*Mystrops*, *Colastus*, *Brachypeplus*, *Conotelus*, *Ecnomæus*, *Epurea*, *Perilopa*, *Soronia*, *Prometopia*, *Platychora*, *Axyra*, *Ischæna*, *Ipidia*, *Amphotis*, *Lobiopa*, *Omosita*, *Phenolia*, *Stelidota*, *Thalycra*, *Æthina*, *Hebascus*, *Gaulodes*, *Lordites*, *Pocadius*, *Camptodes*, *Cyllodes*, *Amphicrossus*, *Pallodes*, *Oxycnemus*, and *Triacanus*.

The year after (1844), in the fifth volume of Germar's 'Zeitschrift,' he gave an appendix to his previous paper, which is chiefly occupied with the characters of the genera of the *Trogositidæ*, which he regarded as a portion of the family of *Nitidulariæ*. I look upon them as a distinct family, and do not include them in this monograph. He there added also the genus *Cybocephalus* to the *Nitidulariæ*—a step from which I dissent for reasons to be presently given.

In 1844 and 1845 Sturm, adopting Erichson's classification, and adapting it to his 'Deutschlands Fauna,' published a sort of monograph of the family as found in Germany, chiefly valuable for the excellent coloured figures given of the different species. No new divisions or genera are there proposed, although one or two new species, chiefly of *Meligethes*, are described.

In 1848 the volume of Erichson's 'Insekten Deutschlands' (usually known as the

third volume), in which the *Nitidulidæ* came in turn to be treated of, appeared. Here he repeated his former views without material alteration, but with the addition of descriptions of the German species of *Meligethes*.

I need not enumerate the authors of local faunas who have adopted Erichson's classification; it would be simply a list of those of every fauna published since his work appeared—Sturm, Stephens, Redtenbacher, Wollaston, Bohemann, Leconte, Thomson, &c. Of these Wollaston, in his 'Insecta Maderensia,' has added the genus *Xenostrogylus* to the group, and Dr. Leconte of Philadelphia *Amartus* (a subgenus of *Carpophilus*) and *Psilopyga* (a well-marked form of the *Strogylinae*). Redtenbacher, in his 'Fauna Austriaca,' has proposed to place the genus *Sphærites* in this family, and Thomson, in his 'Fauna of Scandinavia,' has made a similar suggestion with regard to the genus *Nosodendron*,—propositions, however, which seem unwarranted. Mr. Westwood, in a separate notice, has added the genus *Paromia* to the *Ipidæ*.

The same estimation of Erichson's system has been shown by the authors of works of a more extended and general nature. M. Lacordaire has followed it implicitly, and without correction, in his 'Histoire des Insectes,' as has M. Jacquelin Duval in his 'Genera des Coléoptères d'Europe,' who, however, has proposed two subgenera of the *Brachypteridæ*.

Scarcely anything has been written upon the larvæ of this family. Insufficient notices of one or two by Bouché (Naturg. der Insect.), a description of one species by Curtis, and of two by Erichson (Insekten Deutschlands, vol. iii.), a *résumé* of these by Candèze and Chapuis in their Catalogue of the Larvæ of Coleoptera, and a description of two exotic species by Candèze in his 'Histoire des Métamorphoses de quelques Coléoptères exotiques,' and of one or two by M. Perris in his papers on the Insects of the Maritime Pine (*Pinus maritimus*), are all that has been done on the subject worth mentioning.

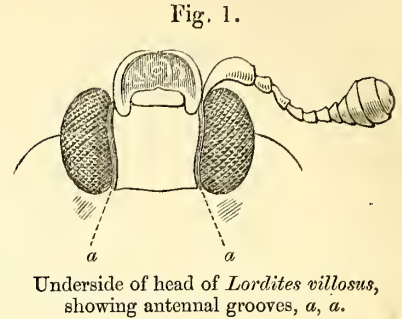
#### CHARACTERS OF THE FAMILY.

*Antennæ*.—The antennæ characterize the whole family, but do not furnish distinctions of much value for minor sectional division. They are clavate, but not geniculated. They vary in the size, form, and proportion of the articles; and the claviform character passes through all the gradations from an almost circular club of comparatively large dimensions as in *Camptodes* or *Æthina*, to little more than moniliform antennæ somewhat thickened towards the apex as in *Brachypterus* and *Brachyleptus*. The proportions of the articles, moreover, are not always, although generally, constant; in *Mystrops*, for example, no two species have them alike. The majority have the first article thick, the second short, the third longer, the fourth shorter, the fifth, sixth, and seventh small and moniliform and about equal in size; the eighth more or less expanded, forming a transition to the club, which is composed of the ninth, tenth, and eleventh.

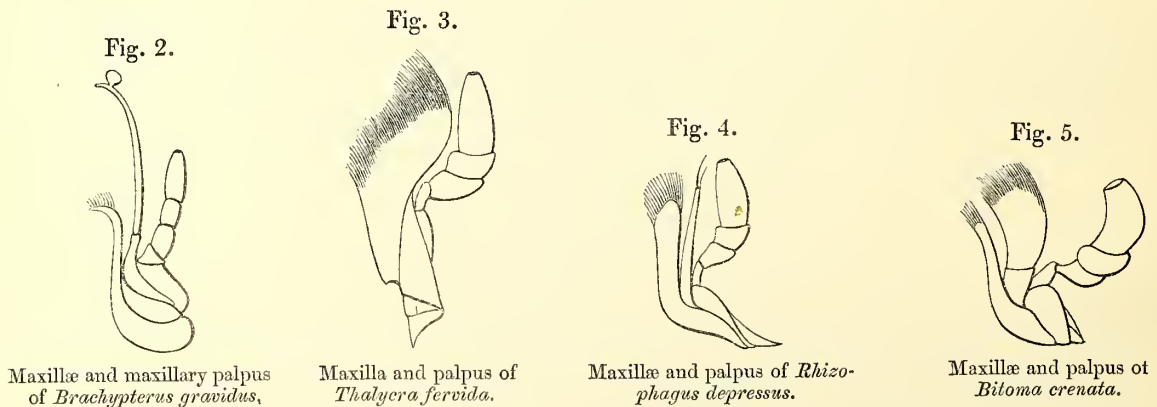
*Antennal grooves*.—In some species there are grooves or hollowed channels under the head, in which the stalks of the antennæ repose when at rest. These usually consist of a narrow groove at the inner and under corner of the eye (fig. 1), extending back-

wards obliquely, or straight on each side of the mentum. The presence or absence of this channel is a useful character, but its degree of obliquity is of more doubtful value.

*Mandibles*.—These are too variable to furnish good sectional characters; very generally they are bidentate at the apex, but sometimes they are simple, and frequently they have a number of small teeth following the two larger ones. In *Cillæus* they are multidentate; and in some of the species of *Ipidæ* the left mandible is bidentate, while the right is simple, the apex of the latter being received between the two teeth of the former.



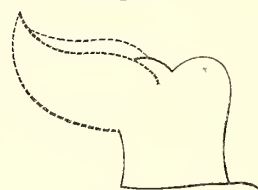
*Maxillæ*.—The maxillæ furnish useful characters for separating the larger groups of Clavicorns. They are constructed on three separate plans—two of them bilobed, and one with only a single lobe. The *Brachypteridæ* have two lobes to the maxillæ. The remainder of the *Nitidulariæ* have only one; and the Clavicorns which follow them have two lobes. The double lobes of the *Brachypteridæ* are unusual, and differ from those of the *Trogositidæ*, *Colydiidæ*, &c. in this respect—that the exterior lobe is not furnished with hairs, but has a small vesicle near the point, whilst in the latter both lobes are furnished with hairs in the usual way. Fig. 2 shows the form of the maxillæ in the *Brachypteridæ*, fig. 3 in the *Nitidulidæ* proper, fig. 4 in the genus *Rhizophagus*, and fig. 5 in the *Colydiidæ*.



*Ligula and Paraglossæ*.—The ligula and paraglossæ of this family have given rise to some discussion and considerable difference of opinion among entomologists, from the fact that they usually have a structure developed which does not exist in other insects. I would refer those who wish to study the relations of these parts to M. Lacordaire's observations on the subject in his 'Histoire des Insectes Coléoptères,' vol. ii. p. 288, and to M. Jacquelin Duval's remarks on the notes to pages 134, 136, and 139 in the 'Genera des Coléoptères d'Europe,' vol. ii. I shall here confine myself to stating the result of my own observations. In the *Nitidulariæ* the ligula is usually a narrow, projecting, oblong, ovate or triangular piece, placed in the mouth, next the mentum: that is, supposing the insect to be walking on the ground, it is nearer the ground than the paraglossæ or their lobes. Behind this lie the true paraglossæ, soldered to it.

The ligula is well seen in its simplest state in *Macrostola straminea*. Figs. 7e & 7e\*\* of Plate XXXV. show the under or, rather, outer side of it—that is, the side next the ground; the two corner pieces at the tip are parts of the paraglossæ, seen behind; suppose these away, the simple ligula remains. If that be turned over, fig. 7e\* is then seen, which is the united paraglossæ, in this instance allowing no part of the ligula to be seen. From each of the anterior angles of the ligula springs, in most of the species of *Nitidulariæ*, a translucent membranous lobe or wing. How this is attached is a point on which I am not yet satisfied. In some it appears to be merely a continuation of the ligula, as if it were expanded into this lobe, its corneous substance thinning off by imperceptible degrees; in others it seems to invest it to the very base, like a gown folded around it (see Plate XXXIV. fig. 5c\*); in many, probably in all, it has a certain amount of lateral motion. My idea of the nature of these membranous lobes is that they are composed of a double fold of membrane, attached to the front and back of the ligula somewhat in the manner shown in fig. 5\*. In some species the outer edge of this double fold is united, while the inner is open, like the mouth of a bag; in others it is disunited on both edges, as if cut asunder at the fold; and in others, again, and that the most numerous body, both sides appear to be united and soldered together. We see the first of these conditions in the Australian *Brachypepli* (see Pl. XXXIV. figs. 10e & 5c\*), in *Haptoncus* (Pl. XXXIII. fig. 7e\*), in *Colastus* (Pl. XXXIV. fig. 1e), and in *Cillæus megacephala*, where it looks like a moveable fringed hood (Pl. XXXV. figs. 4e\* & 4e\*\*); I think we see the second, like double plates, in *Calonecrus* (Pl. XXXII. fig. 9e) and in *Halopeplus* (Pl. XXXV. fig. 1e); and we see the last in *Carpophilus* (Pl. XXXII. fig. 10e), in *Brachypeplus rubidus* (Pl. XXXIV. fig. 6e\*), in *Carpophilus (Stauroglossa) terminalis* (Pl. XXXIII. fig. 4c), where it takes the form of a rounded hammer, and in many others. I do not suppose that in the figures which I have given of my dissections of these parts I have never been mistaken, but I claim the credit of having literally put down what I thought I had seen; and I regard as a merit what may by some be attributed to me as a fault, that I have never filled up blanks with details which I did not see, but which, according to the ascertained anatomy in other species, I might have assumed to be there. For systematic arrangement the ligula and paraglossæ afford characters of variable value. In some genera or sections, as *Carpophilus* for instance, they vary considerably without any other feature suffering a corresponding variation. In others they preserve a well-marked uniformity confined to the species of one genus; or the characters reappear in some distant genus in another section, indicating affinities which would not otherwise have been suspected, as in *Colastus* and *Psilotus*, which belong to different sections of the family, look very unlike, and yet both have the same maxillæ, ligula, and paraglossæ, and these of a peculiar and unusual structure. \*

Fig. 5\*.



*Epistoma and Labrum*.—In all the tribes of the family, except the *Ipidæ*, the labrum is exposed, transverse, and usually bilobed; in the *Ipidæ* the epistome projects over the labrum, concealing it from view.

*Mentum*.—The mentum is sometimes very much developed, as in *Prometopia*, and

when it is so it furnishes a good generic character; but in most of the species there is great uniformity, it being usually bisinuate with a projecting tooth in the middle.

*Palpi*.—The maxillary palpi vary but little. The terminal article is usually cylindrical, with the apex more or less acuminate; and the trifling variations in it are not sufficient to furnish data for subdividing genera or sections. The labial palpi show greater variation, and occasionally furnish characters which may be used for dividing smaller sections.

*Eyes*.—The eyes are lateral and rounded. Considerable difference exists in their size and in the degree of coarseness of their granulation,—*Ips*, for example, having them very finely granulated, and most of the *Nitidulidæ* proper, coarsely. As better characters for distinction generally accompany this, it is not of much practical value.

*Thorax*.—The *Nitidulariæ* comprise within their bounds two styles of form, which at first sight appear as unconnected and as widely separated as can well be imagined—the one an oblong, flat, depressed insect, often scarcely thicker than the piece of paper on which this page is printed, and the other a rounded, semiglobose insect like a *Coccinella* or a *Liodes*. In the parts in which we usually find change of structure explanatory of change of form we here find no difference: antennæ, mandibles, maxillæ, mentum, paraglossæ, cotyloid cavities of the limbs, &c., are all impressed with the same general character, and we have to seek for a defined character in the less seizable arrangements of the body itself. Two characters have been made use of for this purpose—the one the projection or prolongation of the prosternum between the anterior coxæ, and the other the application to or covering of the base of the elytra by the base of the thorax.

These characters are not very satisfactory. In the first place, the meaning intended to be conveyed is not very clear to one who is not familiar with the subject; and even after we know what is meant, the characters in question are so much matters of degree, that it is often with difficulty that one can say whether they are present or not. Have *Lobiopa*, *Lordites*, and *Gaulodes*, for example, their prosternum prolonged behind between the anterior coxæ? They are, to all ordinary apprehension, alike in this respect; but Erichson says that *Lordites* and *Gaulodes* have, while *Lobiopa* has not. To my eye none of them have it. In *Prometopia* does the prothorax cover the base of the elytra? Erichson and Leconte place it among those in which it does not; perhaps they stretch a point to preserve it in its natural place; but the fact, especially in some newly-discovered species, is undoubtedly the reverse.

An equally good definition could be drawn from the comparative convexity of the body—the *Nitidulidæ* proper being mostly oblong and depressed, and the *Strongylinæ* rounded and convex. Another way of saying the same thing (a way, however, which, like all these characters, leaves a sort of debateable ground between the two sections) is to take the comparative length of the thorax above and below. The true *Nitidulidæ* have the thorax nearly as long below as above; the *\*Strongylinæ* not nearly so much so, perhaps not more than half (see figs. 6 & 7). This will be easily understood to be a necessary consequence of the more convex form of the body: as the segments of a circle are smaller as they approach the centre, and as the abdomen is usually not shorter than the back, the thorax is the part where the inner diminution must take place. It is owing

to the same cause that the prosternum is prolonged in the convex species behind the anterior coxæ. The space in which they are placed is so short that they almost break

Fig. 6 a.

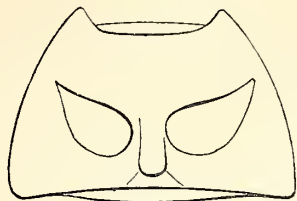
Underside of thorax of  
*Lobiopa decumana*.

Fig. 6 b.

Side view of *Prometopia*  
*sexmaculata*.

Fig. 7 a.

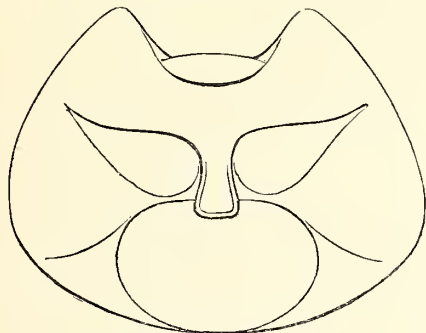
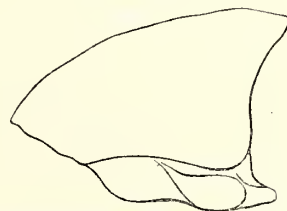
Underside of *Camptodes communis*.

Fig. 7 b.

Side view of *Camptodes communis*.

through the wall behind, and a fulcrum is needed on which to rest them; for this purpose the prosternum is prolonged backwards\*. The thorax in the *Nitidulidæ* is always thinned at the lateral margins and very generally truncate or sinuate behind, and with the anterior angles more or less projecting in front.

*Anterior Coxæ*.—Cylindrical, imbedded in the cotyloid cavities, and not projecting as in the *Staphylinidæ* and *Silphidæ*.

*Anterior Cotyloid Cavities*.—These are always transverse, and form an excellent character for the whole family; they are obtuse at the inner end, and terminate in a point directed obliquely forwards on the outer side. In the *Brachypteridæ* the cavities are so far back that they are open behind, no partition-wall surrounding the back of the coxæ or separating them from the mesothorax.

*Scutellum*.—Varying in form (triangular, pentagonal, semicircular, or quadrangular).

*Mesothorax*.—Short: the mesothorax and its epipleura and epimera are usually soldered together, although the suture can be traced. The mesosternum is in some projected in front to meet the prolongation of the prosternum.

*Middle Cotyloid Cavities and Coxæ*.—Transverse and slightly oblique. The coxæ imbedded.

*Metathorax*.—The metathoracic epipleura are generally long and narrow, diminishing

\* The phrase "prolonged backwards" or "projecting backwards" is very awkward, and, undoubtedly, bad English; but I do not know any other word to use in its place: *retrolonged* or *retrojected* would, I fear, be condemned as still worse.

in breadth from before backwards (see letter *a* in figs. 8, 9 & 10). In the *Strongylinæ* they are broader (see fig. 11, letter *a*). The epimera are short and small, sometimes triangular, sometimes oblong, and at others rhomboidal (see letter *b* in figs. 8, 9, 10, & 11).

Fig. 8.

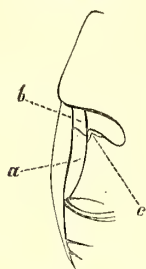
Side of metathorax of *Carpophilus mutilatus*.

Fig. 9.

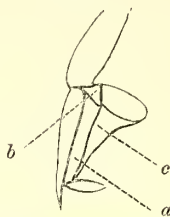
Side of metathorax of *Lasiodactylus brunneus*.

Fig. 10.

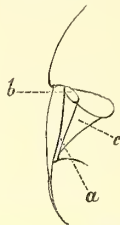
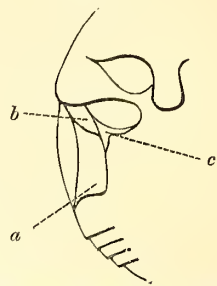
Side of metathorax of *Meligethes æneus*.

Fig. 11.

Side of metathorax of *Camptodes communis*.

*Axillary pieces.*—There is another small character which occurs in the *Strongylinæ* and *Nitidulidæ* proper, which, so far as I am aware, has not been previously observed. It is a small triangular space (see letter *c* in the above figures), marked off in these species by a line or suture, in the angle behind the coxæ of the middle legs and between them and the epimera and epipleura. It is not always clear whether it is a line or a suture. In some it is obviously a mere line; for we can trace it as the mere reflexed margin of the cotyloid cavity in the *Carpophili*. In others, where it is a distinct groove marking off a large corner as in *Lasiodactylus brunneus*, it has doubtless become developed into a suture; but in some others, where, although it still marks off a sufficiently distinct corner, which is differently punctured or sculptured from the neighbouring surfaces, it is not so much developed, and the line is thin and slight, I am inclined to infer that it is a mere line and not a suture. Figs. 8, 9, 10, & 11 show examples of the extent and progressive development of this line: fig. 8 shows it in *Carpophilus*, where it is in its least stage of development and generally wholly absent; fig. 9 in *Lasiodactylus brunneus*, fig. 10 in *Meligethes*, and fig. 11 in *Camptodes communis*. It does not exist at all in the *Brachypteridæ*; it is merely a rudimentary reflexed margin of the middle cotyloid cavities in the *Carpophilidæ*, and is very little developed in that portion of the *Nitidulidæ* proper which are most allied to the *Carpophilidæ*. In many of the species of *Epurea*, for instance, which is most so, it is absent altogether; in the *Nitidulidæ* most akin to the *Strongylinæ*, and in the *Strongylinæ* themselves, it is most developed. I propose to call it the metathoracic axillary piece. It is obviously a natural character, and like all natural characters thins off in species on the one hand, and becomes more developed in those on the other, and occasionally varies in different species of the same genus. In *Prometopia*, for instance, it varies in the amount of development in different species. It therefore cannot be used as a constant character for establishing sectional or generic boundaries, but it will always be found useful as a guide to a correct appreciation of the true position and affinities of puzzling species.

*Posterior Cotyloid Cavities and Coxæ.*—Always transverse, and showing little variation. The breadth of the middle space between them, however, varies in different genera.

*Wings*.—The wings are moderately long (about twice the length of the insect) and have very few nervures—one or two at the base, and, in most cases, none towards the apex of the wing. There appear to be two points which may perhaps be useful for classification. One of these is whether the wing is entire or bilobed as it were—that is, the basal part separated by a narrow cut from the rest of the wing. Fig. 12 represents the wing of *Amphotis marginata*, in which this bilobation is present (letter *a*);

Fig. 12.

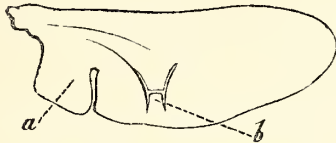
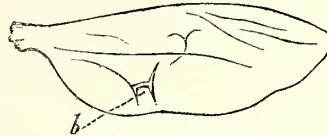
Wing of *Amphotis marginata*.

Fig. 13.

Wing of *Ipidia 4-notata*.

and fig. 13 that of *Ipidia 4-notata*, where it is absent. The bilobed wing seems to be more frequent in the *Nitidulidæ* proper than in the *Strongylinæ*, but it is not confined to them. Some of the genera of *Nitidulidæ*, notably *Ipidia*, *Lobiopa*, *Lordites*, &c., have the wing entire, *Meligethes* has it bilobed, while in *Pria* it is entire. I have not met with any of the *Brachypteridæ* or *Carpophilidæ* where it is simple; they seem all to have a lobe, usually a small one, at the base of the wing. The other specialty is a distribution of the veins somewhat resembling the letter **H**, as shown at *b* in these figures. This seems a more constant character than the previous one, being generally absent in the true *Strongylinæ* and present in the *Nitidulidæ*, but, like the other, it is uncertain and not to be depended on.

*Elytra*.—Varying greatly in size (especially length) and form—sometimes square or oblong, sometimes truncate, sometimes spherically triangular, and sometimes partly rhomboidal; sometimes they cover the whole abdomen, at others only a single segment of it, with all gradations between these extremes. Combined with the relative proportion of the abdomen exposed, they furnish useful characters for classification.

*Abdomen*.—The characters drawn from the abdomen are valuable from being easily accessible and readily recognizable. It is composed of only five segments (with, in some genera, a small additional appendage in the male). On uncovering the back it appears to be composed of six segments, or six and the lateral portions of a seventh; but the sixth and seventh are soldered to the metathorax, leaving only five free segments. The whole of the five segments are visible on the underside,—a point to be noted, as in some classes of Coleoptera the first segment is covered by the metathorax. The segments vary in length, and their relative length has been found a useful sectional or subgeneric character. The junction of the under with the upper side of the segments is almost always effected on the margin or the dorsal side; the under side is turned up and soldered to the upper, the turned-up margin being usually raised higher than the dorsal portion of the segment: in some genera, as *Carpophilus*, the suture is close to the margin; in others, as *Brachypeplus*, distant from it; in others, as *Colastus*, the last segment or pygidium has the hem broad at the base and the other segments narrow. It is also more or less (in *Brachypeplus* entirely) continued along the anterior margin of each dorsal segment, so that if the

separate dorsal part of the segment were removed there would still remain an abdominal ring (fig. 14). I propose to call this hem or turned-over part of the segment the *fimbria*.

*Legs.—Femora.* These are almost always more or less flattened; in some of the species of *Camptodes*, *Amphicrossus*, and *Æthina*, very much so. Where the flattening is not very great, there is a slight depression on the posterior edge of the femur in which the base of the tibia is received. When the legs are very much compressed the inner and posterior side of the femur is thinned to half its thickness, so that the flat tibia folds in upon the flat femur like the blade of a paper-cutting knife. Fig. 15, letter *b*, shows this arrangement. In such cases the side of the tibia and that of the thin portion of the femur are highly polished, although the rest of the leg may be punctate or pubescent.

*Tibiæ.* Sometimes very broad and thin, at others not flattened. The very broad tibiæ are confined to the *Strongylinæ*. In *Meligethes* the serrations of the anterior tibiæ are found to afford useful specific characters. In some genera (*Brachypeplus* for example) there is a small groove on the outer side of the apex, for the reception of the tarsi (see Plate XXXIV. fig. 10, *c*).

*Tarsi.* Pentamerous, but the fourth article is very small. The three first are usually broad, and furnished with long brushes of hairs beneath. The small fourth article (fig. 15, *a*) is one of the best characters for distinguishing the family. It is absent in no species belonging to it, if we remove *Cybocephalus* from it, which, I think, ought to be done.

Fig. 14.

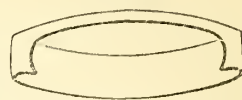
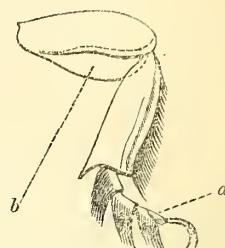
Part of abdominal ring of *Brachypeplus basalis*.

Fig. 15.

Hind leg of *Camptodes fulvus*.

#### LARVA AND METAMORPHOSES.

The remark made by M. Candèze and M. Chapuis upon the larvæ of this family, in their modestly styled "Catalogue des Larves des Coléoptères connues jusqu'à ce jour, avec la description de plusieurs espèces nouvelles," may at this day be repeated with little alteration—"There are few families so considerable as this, of the earlier stages of which so little is known: not more than five or six of these larvæ have been described." Anything further that is known in relation to them proceeds from M. Edouard Perris, in his "Insectes du Pin maritime" (Ann. Soc. Ent. France, 1853), and from M. Candèze himself, who in his 'Histoire des Métamorphoses de quelques Coléoptères exotiques' (1861) has added the descriptions of two or three to the number. But still the number known is even more limited than those mentioned by these entomologists. The five which had been described previous to the publication of their catalogue were *Epurea obsoleta*, *Soronia grisea*, *Pocadius ferrugineus*, *Ips 4-pustulata*, and *Rhizophagus depressus*. But of these the descriptions of *Epurea obsoleta* and *Ips 4-pustulata* were so little detailed as to be of no use, and a doubt has been suggested by Erichson whether Bouché, who describes *Pocadius ferrugineus*, had not confounded it with a *Lycoperdina*; which is not an improbable supposition from his description, and from the fact that both feed on the *Lycoperdon Bovista*. *Rhizophagus* I do not include in my subject. The larva of

one of the species of that genus, *Rh. depressus*, has been described both by Erichson and Perris; but the descriptions of these two authors do not correspond; and Erichson's description must be cancelled or transferred to some other species, for he mentions that he assumed it to be the larva of that species only from finding a number of them in company with the perfect insect; while Perris, on the other hand, carefully and repeatedly bred the insect, and there seems no reason to doubt that perfect dependence may be placed on his observations. I also have received specimens of larvæ supposed, on the same grounds as those relied on by Erichson, to belong to *Rhizophagus depressus*; but these differ both from Perris's and Erichson's descriptions, and of course are useless, and I only mention the circumstance to show the difficulty attending the study of the larvæ of this family. Few can be bred; and unless this be done, we can have no assurance that the larva really does belong to the species to which it is referred. I have received specimens of larvæ referred to different *Nitidulidæ*, which on examination turned out to be the larvæ of Diptera; and I have others given me as belonging to particular species of *Nitidula*, but which I cannot use from want of sufficient evidence that they really do so.

The result of this difficulty in determining the larvæ is that even yet there are not more than about half a dozen species described which can be relied upon—*Carpophilus sexpunctatus* by Perris, *Soronia grisea* by Curtis and Erichson, *Meligethes æneus* by Heeger, *Lordites glabricula* and *Amphicrossus discolor* by Candèze, and *Ips ferruginea* by Perris.

Confined as we are therefore to such imperfect and doubtful materials, any attempt at generalizing is out of the question; all that we can say is that the following characters have been met with in the different species which have been described:—

*Head*.—Small, depressed, rounded.

*Ocelli*.—Placed behind the antennæ, varying in number from two to four on each side.

*Antennæ*.—Usually four-jointed; but Erichson says that in *Soronia grisea* they are only two-jointed; and in another Nitidularian larva which I have received as *Meligethes æneus* they are only three-jointed.

*Labrum*.—Short, transversal, and sometimes bilobed.

*Mandibles*.—Lamellar; usually dentate on the inner side and expanded at the base into a broad flat plate.

*Maxillæ*.—With one lobe only. None of the *Brachypteridæ*, however (which in the perfect state have two lobes), have yet been examined; but it is to be observed that in other Clavicorns which in the perfect state have two lobes to the maxillæ (the *Colydiidæ* for example) there appears to be only one lobe in the larva. It is soldered to or continuous with the mentum.

*Maxillary Palpi*.—Three- or four-jointed.

*Ligula*.—Narrow, terminating variably in front.

*Labial Palpi*.—Two-jointed.

*Mentum*.—Variable in shape.

*Thoracic and Abdominal Segments*.—Of the same general form and consistence. The thoracic segments usually longer and larger than the abdominal. The latter have frequently tubercles on the margins, and bristles or small tubercles or depressions regularly

disposed across the back. The last segment has a pair of hooks at its termination. In some cases there are two additional hooks on the back of this segment.

*Stigmata*.—Confined to the nine abdominal segments; borne in some cases on conical projections along the margins, or in front of them near their base.

*Legs*.—Terminated by a single claw.

I propose to recapitulate what is already known regarding such larvæ as have been described, along with any additional information I may possess on the subject, in a separate chapter at the close of this Monograph.

#### CLASSIFICATION OF THE FAMILY.

The essential characters of the family may be anticipated from the foregoing *résumé*; they may be briefly summed up as follows:—

Ventral segments free, five in number, the first visible both at the middle and sides; some of the dorsal segments membranous. Antennæ more or less clavate, but not geniculate. Tarsi five-jointed, in general dilated; fourth article the smallest, usually very minute. Anterior coxæ transverse, not prominent; anterior cotyloid cavities transverse, oblique, more or less open, and tapering towards the outer side.

This diagnosis excludes *Cybocephalus*, the *Rhizophagi*, the *Peltidæ* and *Trogositidæ*, which have by various authors been ranked as members of this family, but which, although all closely allied to it, seem to me either deserving of being raised into distinct families themselves or placed elsewhere. I shall briefly state my reasons for this opinion.

As to *Cybocephalus*, in the first place, although it possesses many of the characters of a *Nitidula*, it does not look like one. This may appear a very childish reason, but it is less so than it looks. Any one who has ever devoted himself to the study of any natural family knows that the members of it have all a sort of family resemblance, which he who has been constantly poring over them recognizes in an instant without examining a single organ. To my eye *Cybocephalus* wants this family resemblance. It has more the appearance of an *Agathidium* than a *Nitidula*, and on examination we find that the characters of some of the parts which are usually considered of first importance differ from those of the *Nitidulariæ*. The thorax and the cotyloid cavities of the anterior coxæ, although transverse, are not formed quite on the same plan. The figures 6 *a* and 6 *b* show their usual form in the *Nitidulariæ*; fig. 16 shows their form in *Cybocephalus*. Then the tarsi differ in the number of articles. *Cybocephalus* has only four articles to the tarsi, the *Nitidulariæ* have five: Eriehson thought that there was a fifth article, so extremely small as to be overlooked. Duval says there are only four, and my examination confirms his. Duval's extreme care and marvellous skill in minute dissection warrant me in relying on his conclusions\*, the more so that I have had the advantage of seeing him make the dissections and satisfying myself of the accuracy of his observation. Further, it is much smaller in size

Fig. 16.



Under view of thorax  
of *Cybocephalus*  
*festinus*.

\* The following are M. Duval's remarks:—"Erichson, it is true, has thought that the tarsi of *Cybocephalus* consisted of five articles, of which the fourth was extremely small; but he is certainly in error; and it was easy to fall into it with insects so small and so difficult of examination on account of their form. I have assured myself with the greatest care, in three species and in the two sexes, that not even a rudimentary article existed at the base of the latter, and that consequently the tarsi in point of fact consisted only of four articles." . . . "For that verification I have made

than any other genus of the *Nitidulariæ*. I know of no instance in the zoological world where very great differences in size exist in the same family. We should hesitate to class a mouse with an elephant even although it were to possess a trunk and tusks. Some thirty or forty years ago the Foraminifera were classed with the Nautili, but it is long since the totally different nature of the two objects has been recognized. In like manner (although in a less degree) I think the difference in size too great to allow us readily to class *Cybocephalus* with the *Nitidulariæ*. Further, *Cybocephalus* has a peculiarity in habit not possessed by any of the true *Nitidulariæ*. Its body is so constructed that it can roll itself up into a ball.

Next, as regards the *Peltidæ* and *Trogositidæ*, of which I prefer to speak first, as displaying the greater amount of divergence, before discussing the *Rhizophagi*, which form the transition between the *Nitidulariæ* and them, it is to be noticed that, while undoubtedly nearly allied to the *Nitidulariæ*, they differ in two very important points: they have two lobes to the maxillæ, a character found in most of the families of Clavicorns which naturally follow them; they have also the first article of the tarsi smallest, instead of the fourth. The *Trogositidæ*, moreover, have a distinct facies and are considerably larger in size; and although the *Peltidæ* preserve a greater resemblance to the *Nitidulariæ*, they possess similar tarsi and maxillæ to the *Trogositidæ*, and the species naturally arrange themselves with them. If we hold that the *Trogositidæ* form a distinct family, the *Peltidæ* must go with them.

The disposal of the genus *Rhizophagus* is a matter of greater difficulty. It forms the passage between the *Ipidæ* and *Trogositidæ*. *Ips* is the last group of the *Nitidulariæ*. It is well marked by the epistome projecting over the mandibles, but in other respects it does not differ from the rest of the family. It has only one lobe to the maxillæ; it has Nitidularian tarsi, viz. dilated, with five articles, of which the fourth is smallest. Fig. 17 shows the tarsus of *Ips*. *Rhizophagus*, on the other hand, has the tarsi five-jointed in only one of the sexes. In the males there are only four articles, and the tarsi are less dilated than is usually the case in the *Nitidulariæ*. Fig. 18 shows the five-jointed tarsus of the female *Rhizophagus*. Further, *Rhizophagus* has two lobes to the maxillæ, whilst the rest of the *Nitidulariæ* with which it has closest affinities have only one. Contrast fig. 4 (the maxilla of *Rhizophagus*) with fig. 3 (the maxilla of *Thalycera fervida*), which may be taken as a fair example of the normal form of that structure in the *Nitidulariæ*. It may be said that its possessing two lobes is no reason for removing it from them, because the *Brachypteridæ*, a group of *Nitidulariæ* at the other end of the line, have two also. This is true; but

Fig. 17.

Tarsus of *Ips 4-signata*.

Fig. 18.

Tarsus of *Rhizophagus depressus* ♀.

use of extremely high magnifying powers; I have examined the tarsi placed in essences; in fine, I have disarticulated them between two plates of glass, and I have remained convinced that no article existed, as I have said, at the base of the latter. Care must be taken in this examination not to allow one's self to be imposed upon either by the cavity of the third article, in which the fourth is implanted, or by the feeble basal swelling of the articulation of the latter. Erichson was probably deceived by some such illusion." (Duval, *Genera des Col. d'Eur.* ii. p. 151.)

the second lobe of the maxillæ in the *Brachypteridæ* is peculiar. It is not furnished with hooks or hairs, but has a small vesicle at its termination. Fig. 2 shows the bilobed maxilla of *Brachypterus*, from which it will be seen that the bilobed maxilla of *Rhizophagus* differs in character from it, and belongs to the type of the *Trogositidæ*, *Colydiidæ*, and other Clavicorns of that class. I have added fig. 5 to show the bilobed maxilla of *Bitoma crenata* as an example of their style in these Clavicorns. Another distinction of less importance, but one still further indicating a relationship with them, is that the antennæ have only ten articles, the two terminal articles of the club being soldered into one. Several of the *Colydiidæ* have this peculiarity—notably *Cicones*, *Synchita*, *Sarrotrium*, *Pycnomerus*, *Cerylon*, &c. On the above grounds I exclude *Rhizophagus* from the family of the *Nitidulariæ*.

The first step to the classification of the family thus restricted is to separate it into those whose maxillæ have two lobes and those which have only one. The *Brachypteridæ*, as already mentioned, have two lobes, the external of which is long and slender and terminated by a vesicle (see fig. 2, *suprà*). In this tribe also two of the dorsal segments of the abdomen are exposed.

The whole of the remaining species have only one lobe to the maxillæ; and a further dismemberment of them may be made at the other end of the line by setting apart all those which have the epistome prolonged and covering or almost covering the labrum (as in fig. 19), which form the tribe *Ipidæ*, in contradistinction to the species with an exposed labrum as in fig. 20, which represents the form of these parts in the majority of the family.

The species which fall into neither of these sections may next be separated into those which have the pygidium or last dorsal segment of the abdomen alone exposed, and those which have more than it exposed, viz. the last two, three, or four dorsal segments. The latter form the tribe *Carpophilidæ*.

These being withdrawn, there remains a numerous body of insects for the division of which there is more difficulty in finding characters. It comprises two different forms (each of which may again be divided into other sections),—one the *Nitidulidæ* proper, generally of an oblong shape and more or less depressed; the other the *Strongylinæ*, more or less rounded, deep, and globose, reminding one of some of the *Coccinellidæ* or *Chrysomelidæ*. Erichson made the distinctive character of the *Strongylinæ* the extension of the prosternum behind the anterior coxæ, as shown in the foregoing fig. 7 *a* & fig. 7 *b*, which represent the underside of the thorax of *Camptodes communis*. The absence of this extension or prolongation was his distinguishing character of the *Nitidulidæ* as contradistinguished from the *Strongylinæ* (see figs. 6 *a* & 6 *b*). He then divided those which had it into *genuine Strongylinæ*, in which the prothorax covered the base of the elytra, as in fig. 21, and *spurious Strongylinæ*, in which it was only applied to their base, as in fig. 22. Leconte, using the same characters, has only reversed their

Fig. 19.

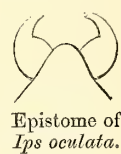
Epistome of  
*Ips oculata*.

Fig. 20.

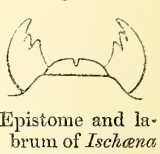
Epistome and labrum of  
*Ischæna angustata*.

Fig. 21.

Base of thorax of  
*Camptodes communis*.

Fig. 22.

Base of thorax of  
*Lobiopa decumana*.

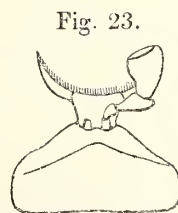
application. He includes Erichson's spurious *Strongylinæ* in his *Nitidulinæ*, making the character of the section that the prothorax does not cover the base of the elytra, and dividing it into two groups, the *Nitidulidæ* proper and the *Meligethidæ*, by the prolongation or not of the prosternum behind the anterior coxæ. He then gives the "prothorax covering the base of the elytra" as the character for his *Cychramini*, by which name he designates Erichson's *Strongylinæ genuinæ*.

While I admit that the *Meligethidæ* deserve a subsection to themselves, I think with Erichson that they have more affinity with the *Strongylinæ* than with the *Nitidulidæ* proper, and therefore I have so arranged my characters as to bring them into that section. On the other hand, I think the affinity between *Phenolia*, *Lobiopa*, *Stelidota*, &c., and *Lordites* and *Gaulodes* is so great, that it is impossible to retain the latter among the *Strongylinæ*. They are the most convex of the *Nitidulidæ* proper, and have, of course, thence necessarily acquired a corresponding proportion of those characters which depend upon the convexity of the insect, but all their other characters range with these genera.

Speaking without precision, the *Nitidulidæ* proper may be distinguished as being oblong and depressed, whilst the *Strongylinæ* are rounded and convex. With more precision, the *Strongylinæ* may be characterized by the under side of the thorax being much shorter (one-half is about the usual proportion) than the upper side (see fig. 7), the *Nitidulidæ* by being only slightly shorter (one-third is about the extreme of the least convex species) (see fig. 6). The prolongation of the prosternum behind the anterior coxæ may, with the qualifications already indicated, be also taken as a character for dividing them—the *Strongylinæ* possessing it, the *Nitidulidæ* not.

To justify the separation of the *Meligethidæ* as a subsection from the rest of the *Strongylinæ*, the form of the paraglossæ seems sufficient. In the former they are horned (fig. 23), and in the latter more or less rounded (fig. 24).

A subsection of the *Nitidulidæ* may be founded upon those genera which have the metathoracic axillary pieces well developed in contradistinction to those which have not.



Ligula and paraglossæ of *Pria Dulcamaræ*.



Ligula and paraglossæ of *Cyl-lodes ater*.

#### HABITS AND GEOGRAPHICAL DISTRIBUTION.

The chief function of this family is that of scavengers. Their main business is to clear off decaying substances from the face of the earth, especially those minute and neglected portions which have escaped the attention of other scavengers whose operations are conducted on a larger scale. We may characterize them in one point of view as retail scavengers. They are, so to speak, users-up of waste materials. After the beast of prey has satisfied his hunger on the animal he has slain, after the hyæna and the vulture have gorged themselves on its carrion, after the fly with its army of maggots has consumed the soft parts, after the burying-beetle and the Silphidæ have borne their part in the clearing away and when nought but the bones remain, then come the *Nitidulariæ* to go over what they have left, to gnaw off every fragment of ligament or tendon, and to

leave the bones as nearly in the state of phosphate of lime as external treatment can. In another point of view, however, their employment is wholesale and wide enough. They conduct their operations all over the world, their branches extend into the most remote districts; the materials with which they have to do, although mere waste, have no other limit to their variety or their number than the organized substances found on the surface of the globe. As in all great establishments, too, the principle of division of labour is carried to a great extent. Each different kind of substance has a different member of the firm told off to take charge of it. One species confines itself to rotten oranges, another to bones, a third to putrid fungi, a fourth to decaying figs. Decaying wood, decaying bark, decaying flowers, decaying leaves, all furnish distinct employment to different species.

They are not all scavengers, however. Many pass their lives in flowers; others feed upon fresh victuals; and Mr. Frederick Smith of the British Museum has, whilst I write, brought to my notice a species of *Brachypeplus* (*B. auritus*) which he has received from Australia, in a wild bee's nest, where it feeds, both in the larva and perfect state, on the wax and honey.

With such extensive functions, it follows that the family is cosmopolitan; so are most of the genera and even a few of the species. The wide distribution of these is no doubt due to the universal presence of their food and to their introduction into distant countries by accidental causes, of which the migrations of man are probably the most prominent; but there are occasional instances of species so nearly alike to others (whose habitat is at great distances) as to be scarcely distinguishable, and yet on close examination certainly distinct, and whose occurrence in such distant localities it is very difficult to account for. Take, for example, the genus *Stelidota*, which is properly an American form, seeing that out of nineteen or twenty species all are from the American continent, except one from Tahiti, one from Celebes, and two from Madagascar. (I do not include here another large species from Celebes, which forms the passage from *Stelidota* to *Lordites*, and which I have constituted a separate genus.) Of the Madagascar species one is so very like the commonest North American species (*St. geminata*), that, if placed among a number of them and passed off as coming from America, it would probably never be detected as different, although when forewarned by the locality, and looking for distinctions, it is rightly viewed as a distinct species. How are we to account for this close resemblance? The transference of a species from Carolina to Madagascar without man's assistance is not easily conceived; and if we imagine that a *Stelidota geminata* has been introduced by ships from North America, the period of introduction must have been comparatively recent—not more than 200 years ago. Can we believe that in that short space of time climatal causes have changed *Stelidota geminata* into *St. didyma*? No introduction, of either plant or animal, from the oldest time to which introduced species have been traced back, has, so far as we know, ever resulted in an alteration in the species, without man's assistance by breeding or cultivation; and if we were to adopt this solution in the case of *Stelidota didyma* we could not refuse to extend it to the other species, *St. orphana*, which again is a little more removed from *St. geminata*. Our explanation would then be that the latter had been introduced from North America into Madagascar,

its descendants had under the new conditions changed into *St. didyma* and given off cousins now called *St. orphana*, and that all this had been done within the short space of a couple of centuries, probably much less. A similar explanation would do for the Tahiti species, with this difference, that its parent was probably *Stelidota ruderata* from the West Indies. The variations in these are slight, and very different in degree from the class of phenomena of which the existence of the new genus *Lordyra*, found by Mr. Wallace in Celebes, is an example.

There are other genera which, although almost entirely confined to one country, are also represented in some other distant lands by one or two exceptional species. There is the genus *Lobiopa*, of which there is one species in North America, several in Mexico and the West Indies, a greater number in Brazil, Para, and Columbia, two species in Peru, and one in Senegal. The Peruvian species are obviously outliers from Columbia. The district about Quito embraces many species of plants and animals which are called Peruvian or Columbian according as they are most frequent in Peru or Columbia; and when we see the *same species* thus found on both sides of the Andes, it is natural to expect that different species of the same genus should also be found. But it is different with the Senegal species. I have already, in a paper published in this Society's 'Transactions,' "On the geographical relations of the Coleoptera of Old Calabar," pointed out the occurrence on that part of the west coast of Africa of species belonging to genera of remarkable facies which had up to that time been supposed to be peculiar to the opposite coast of South America, and in that paper I briefly discussed the question whether their presence on the west coast of Africa, and similar instances of the converse where West-African forms are met with in Brazil, could be referred to the proximity or junction of the two continents at some former period of time not so distant as to have allowed great changes in the fauna to be gradually effected. The *Nitidulariæ* furnish a number of instances illustrative of this point. Besides *Lobiopa*, the Brazilian genus *Platychora* has representatives in Africa; there are species of *Perilopa* both in Africa and Brazil; and Old Calabar furnishes at least two species of the American genus *Prometopia*—although this is of less importance, as other species are found in the East Indies and Philippine Isles.

An interesting point in the distribution of genera which are thus widely spread is the fact that they are not found in numbers in these outlying districts: the number in what we may call the metropolis of the genus may be considerable; but we find that of those located elsewhere very limited—one dropped here, and another there, at immense distances. Take *Prometopia*: we find one species of it in North America, one in Mexico, four in Para, &c., two in West Africa, one in the East Indies, and six in the Malayan Archipelago. Others, again, seem equally scarce everywhere. We know of one species of *Æthina* in Madagascar, one in the East Indies, one in Australia, one in Africa, and one in Mexico. With the exception of the genera *Colastus* and *Camptodes*, peculiar to America, I do not remember any genus containing numerous species which is confined to one hemisphere. Of course where a genus has only one species it must be confined to one hemisphere, unless indeed the species is cosmopolitan (and I know of no instance where a genus with only one species has that species widely distributed).

## Family NITIDULARIÆ.

Antennæ rectæ, clavatæ. Coxæ anticæ cylindricæ, receptæ. Acetabula transversalia. Abdomen segmentis ventralibus quinque, omnibus liberis. Tarsi articulis quinque, quarto minimo.

Mentum transverse, subquadrate, composed of two pieces closely united together, frequently rounded, sometimes sinuate or emarginate in front. Maxillæ usually exposed, rarely covered at the base; with only one lobe, except in the first Tribe, where there is an outer lobe. Antennæ inserted under the margin of the front, eleven-jointed, terminated by a round or oval club composed of three or, rarely, of two articles. Thorax sometimes closely applied to the elytra, sometimes enclosing their base. Prosternum frequently produced behind; parapleura not distinct; coxal cavities transverse. Mesothorax with the parapleura large, extending to the coxæ. Metathorax short, parapleura narrow. Elytra sometimes truncate, sometimes entire. Abdomen with five free ventral segments, the first a little longer. Anterior coxæ transverse, separated, not prominent; middle and posterior ones transverse, flat, the latter extending almost to the margin of the body. Legs short, somewhat stout, retractile or subretractile; tarsi short, usually dilated, hairy beneath, five-jointed, with the fourth article very small.

Five tribes compose this family, and the species belonging to each may be recognized by the following dichotomous table:—

	{ Labrum not concealed by the prolonged epistome . . . . .	1
	{ Labrum concealed by the prolonged epistome . . . . .	IPIDÆ.
1	{ Two or three dorsal segments of the abdomen exposed . . . . .	2
	{ The last dorsal segment (pygidium) alone exposed . . . . .	3
2	{ Maxillæ with two lobes . . . . .	BRACHYPTERIDÆ.
	{ Maxillæ with one lobe . . . . .	CARPOPHILIDÆ.
3	{ Prothorax not much shorter below than above . . . . .	NITIDULIDÆ.
	{ Prothorax much shorter below than above . . . . .	STRONGYLINÆ.

## Tribe I. BRACHYPTERIDÆ.

Genus *Cateretes*, Erichs. in Germ. Zeitschr. iv. 227 (1843).

Maxillæ malis binis. Labrum distinctum. Antennæ clava haud magna vel abrupta. Sine sulcis antennariis. Acetabula antica transversa, aperta. Abdomen segmentis duobus vel tribus ultimis liberis. Coxæ posticæ valde distantes.

The exposed labrum, the epistome not produced, the two-lobed maxillæ, the absence of antennal grooves, the open transverse anterior cotyloid cavities, and the exposure of more than the last segment of the abdomen, all readily distinguish this tribe.

The absence of antennal grooves is a character by which to distinguish them from the greater number of the *Carpophilidæ*, although not from all, the genus *Mystrops* proving an exception to the general rule in the *Carpophilidæ*. There are no metathoracic axillary pieces. The club of the antennæ is gradually thickened, not suddenly increased into a circular club.

They live upon flowers, and are comparatively few in number.

They may be divided into two genera, according to whether the claws of the tarsi are toothed or not, each of which, again, may be further subdivided.

The following dichotomous table shows some of the characters of the different genera into which they may be classed:—

1	{	Ungues simple . . . . .	1
	{	Ungues toothed at the base . . . . .	<i>Brachypterus</i> .
	{	Pygidium simple in both sexes . . . . .	<i>Cercus</i> .
	{	Pygidium with an accessory segment in males . . . . .	<i>Amartus</i> .

#### Genus CERCUS.

Latr. Préc. d. car. gén. d. Ins. 68 (1796). Erichs. in Germ. Zeitschr. iv. 228 (1843). Sturm, Deutschl. Faun. xv. 1. taf. 288 (1844). Erichs. Naturg. Ins. Deutschl. iii. 126 (1848). Redtenb. Faun. Austr. gen. 124. p. 161 (1849). Lacord. Hist. des Coléopt. ii. 291 (1854). Jacq. Duval, Gen. des Coléopt. d'Europe, ii. 135 (1857-59).

Fig. 25.

Unguiculi simplices.



Claw of *Cercus*.

Besides the claws of the tarsi being simple in this genus, the last article of the labial palpi is usually oval. Erichson made this character a point of distinction between *Cercus* and *Brachypterus*, in which it is usually subglobose; but some of the species of the latter from California have the article in question elongate-oval, and therefore it cannot be used to distinguish them. A similar remark applies to a character drawn by Erichson from the pygidium, to which there is, according to him, a small appendage added in the males and not in the females in *Brachypterus*, while it continues simple in both sexes in *Cercus*. Leconte's genus *Amartus*, however, which has the simple claws of *Cercus*, has this supplementary piece added to the pygidium in the males. That character occurring in both, can therefore be used only to distinguish subsections in each genus.

#### CARPOPHILUS.

*Position and Affinities.*—BRACHYPTERUS. CERCUS. MYSTROPS.

#### MELIGETHES.

Different authors have divided the genus *Cercus* into four genera. I do not think they are called for; but as they may be of use in rendering the determination of the species belonging to it more easy, I have given them here as subgenera. They may be thus distinguished:—

1	{	First and second articles of the antennæ simple . . . . .	1
	{	First and second articles of the antennæ much dilated in the males . . . . .	Subg. <i>Anomæocera</i> .
	{	Pygidium with a supplementary anal piece in the males . . . . .	<i>Amartus</i> .
	{	Pygidium without a supplementary anal piece in the males . . . . .	2
2	{	Pronotum with the posterior angles rounded . . . . .	Subg. <i>Cercus</i> .
	{	Pronotum with the posterior angles right-angled . . . . .	Subg. <i>Heterhelus</i> .

## (Subgenus ANOMÆOCERA.)

Shuckard, Coleopt. Delin. 25. pl. 30. fig. 2 (1840). Jacq. Duval, Gen. des Coléopt. d'Eur. ii. 137 (1857-59). *Anisocera*, Steph. Illustr. Brit. Entom. v. 438 (1832).

Antennarum articulus primus et secundus maribus dilatati.

The first and second articles of the antennæ dilated in the males. Considerable variation in the degree of dilatation and size of these articles occurs in different individuals even of the same species, which makes the antennæ themselves look longer in some than in others.

1. *CERCUS PEDICULARIUS*. (See Plate XXXII. fig. 1.)

Latr. Gen. Crust. et Ins. ii. 16. 4 (1807). (Dej. Cat. 137, ed. 1837.) Erichs. in Germ. Zeitschr. iv. 288. 1 (1843). Sturm, Deutschl. Faun. xv. 5. 1. taf. 288 (1844). Erichs. Naturg. Ins. Deutschl. iii. 126. 1 (1848). Redtenb. Faun. Austr. 161 (1849).

*Dermestes pedicularius*, Linn., Fabr., Schrank, Payk., Panz.

*Cateretes pedicularius*, Herbst, Gyll., Duftschm., Steph., Heer, Schönh.

*Brachypterus pedicularius*, Kugell.

*Nitidula truncata*, Fabr. Syst. El. i. 354. 37 (1801).

*Anisocera Spireæ*, Steph. Illustr. Brit. Ent. Mand. v. 438 (1832).

*Anomæocera Spireæ*, Shuck. Coleopt. Delin. 25. pl. 30. fig. 2 (1840).

Fortiter punctatus, testaceus, sutura elytrorum pectoreque piceis; prothorace lateribus rotundatis; elytris thorace fere duplo longioribus. Long.  $\frac{3}{4}$ - $1\frac{1}{4}$  lin., lat.  $\frac{1}{4}$ - $\frac{1}{2}$  lin.

Per totam Europam communis.

Strongly punctate, testaceous, with the suture of the elytra and breast piceous. Head even. Antennæ in both sexes longer than half the body, longest in the males; the first article elliptical, the second three-cornered. Thorax about the breadth of the elytra, half as long as broad, the sides rounded, the anterior angles obtuse, the posterior oblique and rounded, finely pubescent, coarsely but not deeply punctate. Scutellum large, rounded. Elytra almost twice as long as the thorax, convex, and somewhat obese; exterior apical angles rounded, apex truncate somewhat obliquely inwards and forwards. Yellow rust-coloured or light brown, with the breast, the scutellum, and the neighbouring portion of the elytra piceous.

Not rare in Europe; common in England.

2. *CERCUS BIPUSTULATUS*.

(Dej. Cat. 137, ed. 1837.) Erichs. in Germ. Zeitschr. iv. 229 (1843). Sturm, Deutschl. Faun. xv. 7. 2. taf. 289. fig. A, a, b (1844). Erichs. Naturg. Ins. Deutschl. iii. 127. 2 (1848). Redtenb. Faun. Austr. 162 (1849).

*Dermestes bipustulatus*, Payk., Fabr.

*Cateretes bipustulatus*, Gyll., Duftschm., Steph., Heer.

Fortiter punctatus, niger; ore, antennis, pedibus elytrorumque macula magna discoidali rufo-testaceis; prothorace lateribus rotundatis; elytris thorace sesquiplo longioribus. Long.  $\frac{3}{4}$ - $1\frac{1}{4}$  lin., lat.  $\frac{1}{4}$ - $\frac{1}{2}$  lin.

Per totam Europam communis.

In size and form very like the preceding. Black, clothed with fine grey pubescence,

rather more deeply punctate. The mouth, the antennæ, the legs, and a patch on each elytron reddish yellow. Sometimes the head, or the head and thorax, or even the whole body is reddish yellow. The elytra are considerably shorter than in *C. pedicularius*.

Common in Europe; not rare in England.

Var. *suturalis* (Motsch.). Fortiter punctatus, testaceus, elytris dilutioribus, scutello elytrorumque apice et macula triangulari circa scutellum brunneis. Long.  $\frac{3}{4}$  lin., lat.  $\frac{1}{4}$  lin.

Habitat in Siberia orientali.

Received from Count Motschulsky under the above name; but I do not think it is a distinct species from *C. bipustulatus*. The only differences beyond colour which I can see are that it is somewhat more deeply punctate, and that the thorax is perhaps a little more expanded before the posterior angles. I have placed the specimen in the British Museum.

From Eastern Siberia.

### 3. *CERCUS OCHRACEUS*.

(Dej. Cat. 136, ed. 1837.)

*C. bipustulato* affinis; major, punctatus, flavo pubescens; prothorace transverso, marginibus rotundatis vix explanatis; elytris magis parallelis, thorace plus quam sesquiplo longioribus; flavus. Long.  $1\frac{1}{3}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in Volhynia.

Distinguished from its allied species by its slightly larger size and more parallel form, as well as by its colour. It corresponds with the description given by M. Fairmaire of his Algerian species *C. flavescens*, except in the length of the elytra, which he states to be shorter than in *C. bipustulatus*, whereas in this species they are rather longer. The colour is bright flavous, the thorax and head a little darker, and a slight obscurity about the scutellum. The punctation is distinct, but not very close.

From Volhynia.

The only example of this species which I have seen is in the Dejean collection, kindly lent to me by the Marquis de Laferté-Sénéctère.

### 4. *CERCUS FLAVICANS*.

Fairm. Ann. Soc. Ent. de France, sér. 3. viii. 166 (1860).

“Ovato-oblongus, flavus, nitidus, dense punctatus, pygidio sparsim ac tenuiter asperato; antennis sat validis, testaceo-flavis, apice obscurioribus; elytris thorace duplo longioribus, apice parum rotundatis, angulo suturali obtuso. Long. 1 lin.”

Habitat in Algeria.

I have not seen this species: M. Fairmaire mentions that it resembles the female of *C. pedicularius*, but the body is much less convex, the thorax is broader, the antennæ shorter and thicker; the elytra are shorter, more parallel, and the punctation not so deep.

From Algeria.

(Subgenus *HETERHELUS*.)

Jacq. Duval, Gen. des Coléopt. d'Europe, ii. 137.

Pronotum angulis posticis rectis.

The thorax in this subgenus has the posterior angles briefly right-angled at the tip (see fig. 26).

Fig. 26.

Form of thorax in the subgenus *Heterhelus*.5. *CERCUS SAMBUCCI*.

Erichs. in Germ. Zeitschr. iv. 229. 4 (1843). Sturm, Deutschl. Faun. xv. 9. 3. taf. 289. fig. C (1844).

Erichs. Naturg. Ins. Deutschl. iii. 127. 3 (1848).

*Cateretes Solani*, Heer, Faun. Col. Helv. i. 412. 7 (1841) ♂.— *scutellaris*, Heer, Faun. Col. Helv. i. 412. 8 (1841) ♀.(*Cercus ferrugineus*, Dej. Cat. 137, ed. 1837.)

Fuscus testaceusve, cinereo pubescens, dense subtilius punctatus; prothorace lateribus subangulato. Long.  $1-1\frac{1}{4}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in Europa.

Usually clear rust-colour, but sometimes darker, finely and closely pubescent, moderately densely and finely punctate. Antennæ with the club in the females two-jointed. The thorax with the sides somewhat angularly expanded in the middle. The eyes, breast, and abdomen black. The elytra long, and most convex a little past the middle. Scutellum rounded at the apex.

Distinguished from its allied species by the slightly angular sides of the thorax and the fine punctation.

Found on the flowers of *Sambucus racemosus* in spring in most parts of Europe. Not found in England.

6. *CERCUS LONGIPENNIS* (Motsch.).

Leviter punctatus, ferrugineo-testaceus, cinereo pubescens, elytris flavis; prothorace transverso, lateribus rotundatis; elytris prothorace fere triplo longioribus. Long.  $\frac{3}{4}$  lin., lat.  $\frac{1}{4}$  lin.

Habitat in Dauria meridionali.

Allied to *C. Sambuci*, but smaller and of finer punctation, and less pubescent. The elytra comparatively a little longer, and the thorax not so angular in the middle. Reddish yellow, with paler elytra. I received a single specimen from Count Motschulsky, from Southern Dauria, which I have placed in the British Museum.

7. *CERCUS RUBIGINOSUS*.*Cateretes Spireæ*, Märkel, Allgem. Naturg. Zeit. iii. 176 (1857).*Cercus Rhenanus*, Bach.

*Brachypterus rubiginosus*, Erichs. in Germ. Zeitschr. iv. 232. 9 (1843). Sturm, Deutschl. Faun. xv. 30. 6. taf. 291. fig. D (1844). Erichs. Naturg. Ins. Deutschl. iii. 133. 6 (1848).

Saturate vel dilute fuscus, subnitidus, cinereo pubescens, dense subtiliterque punctatus;

prothorace lateribus haud angulatim rotundatis; elytris humeris prominentibus. Long.  $1-1\frac{1}{4}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in Germania.

Allied to *C. Sambuci*, but distinguished by the colour and by the absence of the angular expansion of the sides of the thorax. It is more shining. The antennæ have the club three-jointed in both sexes. The scutellum is triangular with the apex acute, while in *C. Sambuci* it is rounded. The shoulders of the elytra are very prominent. The profile of *C. Sambuci* is more level than that of *C. Spirææ*, which has a greater declivity between the base of the thorax and the base of the elytra. However, except in very exceptional cases, there is no need to refer to these points to distinguish the species, the colour alone being quite sufficient—dark rich umber in *C. Spirææ*, and pale testaceous in *C. Sambuci*.

This species was first noticed by Erichson, but somehow was mistaken for a *Brachypterus*, and described by him under the name of *Brachypterus rubiginosus*.

Märkel, in ignorance of Erichson's error, described it under the name of *Cateretes Spireæ*; and Herr Bach, of Boppard, having afterwards found specimens which appeared to him different, made it known under the name of *Cercus Rhenanus*; and all three names hold their place in Continental lists *in fide parentum*. A careful examination of the specimens of *B. rubiginosus* preserved in the Berlin Museum shows that they belong to the genus *Cercus*, and that they are the same as Märkel's and Bach's species.

I am informed by Herr von Kiesenwetter that this species may be taken in thousands in the valley of Dresden in the month of July, on the flowers of *Spiræa Ulmaria*.

Herr Bach takes it in profusion near Boppard in the month of March, on the same tree as *Cercus Sambuci*, viz. *Sambucus racemosus*, but always a fortnight before it, it appearing before the buds are open.

The difference in the time of appearance would lead one at first to suppose that Bach's species must be distinct from *C. Spireæ*, Märkel; but I have failed to discover any difference; and as Märkel came to the same conclusion, I have felt constrained to consider them the same, notwithstanding this embarrassing circumstance. The Saxon specimens taken in July may be a second brood.

It is widely distributed, being found in most parts of Europe—and also, probably, throughout Asia, as I have received a specimen from Count Motschulsky, named by him *C. melanocephalus*, which had been taken on the banks of the river Amoor, and which is now in the collection of the British Museum. I can discover no difference between this specimen and those taken in Europe, unless perhaps that it is a trifle less convex.

#### 8. CERCUS PENNATUS.

Query, *Cercus pusillus*, Melsh. Proc. Acad. Philad. ii. 105 (1846)?

Fulvus vel piceo-fulvus, capite, disco thoracis scutelloque parum saturatioribus, punctatus, pubescens; scutello parum punctato, obtuse rotundato; elytris longis, sutura versus scutellum paululo elevata, utrinque linea brevi subdepressa, apice rotundato, truncato. Long.  $1\frac{1}{4}$  lin., lat.  $\frac{3}{5}$  lin.; long. elytrorum  $\frac{3}{4}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in America boreali.

The American representative of *C. Sambuci*; longer and larger, somewhat narrowed in

front. Dull fulvous, with the head, the disk of the thorax, the scutellum, the part of the elytra adjacent to it, and the suture, a little darker; finely punctate and pubescent, rather dull. The head with a faint semicircular line impressed between the eyes. Antennæ with the club in the female two-jointed. Thorax with the base subemarginate and the sides rounded; slightly margined, the anterior angles a little inflexed and somewhat obtusely rounded. Scutellum slightly punctate, obtusely rounded at the apex. Elytra long, broadest behind, a little broader than the thorax at their base, with the shoulders slightly prominent; the suture slightly elevated towards the scutellum, bearing on each side a short subdepressed line; sides margined and almost inflexed, with the apex truncate and the angles rounded. The pygidium and projecting angles of the preceding segment alone exposed.

Found in Canada, Pennsylvania, and other parts of North America.

There is a species described by Melsheimer (*Cercus pusillus*) which may possibly be the same as this, or *Cercus crinitus* (see p. 237); but I have been unable to procure authentic specimens of it or to identify it from Melsheimer's description, and have consequently not ventured to adopt his name for it.

#### 9. CERCUS ABDOMINALIS.

Erichs. in Germ. Zeitschr. iv. 229 (1843).

Viridis, nitidus; antennis, pedibus abdomineque rufo-testaceis. Long.  $1\frac{1}{4}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in America boreali.

A very distinct and well-marked species. Of the size of *C. bipustulatus*, oval, slightly convex, very sparingly and finely cinereo-pubescent. Green, shining, and thickly punctate. Antennæ rufo-testaceous; club three-jointed in both sexes. Mouth rufous. Thorax convex, narrower than the elytra; sides rounded, posterior angles right-angled, but blunter than in other species of the genus. Scutellum sparingly punctate. Elytra broad, convex; shoulders somewhat piceous. Breast black.

The only one of the *Brachypteridæ* with something of a metallic lustre.

It does not appear to be common.

(Subgenus CERCUS proper.)

Jacq. Duval, Gen. des Coléopt. d'Europe, ii. 137.

Pronotum angulis posticis rotundatis.

The slightly rectangular termination to the posterior angles of the thorax is not present in this subgenus.

Fig. 27.



Form of thorax in subgenus *Cercus* proper.

#### 10. CERCUS DALMATINUS.

(Dej. Cat. 137, ed. 1837.) Erichs. in Germ. Zeitschr. iv. 229. 5 (1843). Sturm, Deutschl. Faun. xv. 12. 4. taf. 289. fig. d, D (1844). Erichs. Naturg. Ins. Deutschl. iii. 128. 4 (1848).

Var. C. TESTACEUS (Dej. Cat. 137, ed. 1837).

Fortiter punctatus, testaceus, cinereo pubescens, scutello, clytrorum sutura, pectore abdomineque piccis; clytris thorace sesquiplo longioribus. Long. 1 lin., lat.  $\frac{2}{5}$  lin.

Habitat in Austria, Dalmatia, et Græcia.

Somewhat of the appearance of *C. pedicularius*, but smaller and narrower, punctate, and with longer and closer grey pubescence and much shorter antennæ, which are only as long as a fourth of the length of the body. Testaceous, with the scutellum, the elytra on each side of the suture, and the breast and abdomen piceous. The thorax about the breadth of the elytra, and a half broader than long, narrowed in front and with the sides rounded. Scutellum punctate and apex obtuse. The elytra are a half longer than the thorax. Breast and abdomen finely punctate.

This species is found in the Austrian German provinces, as well as in Dalmatia and Greece. Herr von Kiesenwetter informs me that in Greece it is found on a species of *Carex* growing in the sea marshes.

The specimens standing under the name of *C. testaceus* in Count Dejean's collection are flavous-coloured varieties of *C. Dalmatinus*, and are said also to come from Dalmatia.

#### 11. CERCUS CRINITUS.

Statura *C. Sambuci*, rufo-testaceus, capite et prothorace paulo saturationibus, leviter punctatus, subnitidus, longe pubescens; elytris thorace magis punctatis, humeris prominentibus, apice truncato, angulis paulo rotundatis. Long. 1 lin., lat.  $\frac{1}{2}$  lin.

Habitat in Tennessee in America boreali.

Of the size of *C. Sambuci*. Rufo-testaceous, head and thorax darker, faintly punctate, slightly shining, with a comparatively long, loose, fine pubescence. The head deeply impressed on each side in front. The thorax both before and behind moderately rounded and margined, all the angles rounded. The elytra more deeply punctate than the thorax, moderately long, with prominent shoulders, and sides rounded and almost inflexed; the apex truncate, with the angles, both exterior and sutural, rounded. The pygidium and the projecting angles of the preceding segment alone exposed.

Found in Tennessee. I am indebted to Dr. Schaum for the specimen now in the British Museum.

#### 12. CERCUS RUFILABRIS.

Latr. Gen. Crust. et Ins. ii. 16. 3 (1807). Erichs. in Germ. Zeitschr. iv. 229. 6 (1843). Sturm, Deutschl.

Faun. xv. 13. 5. taf. 289. fig. E (1844). Erichs. Naturg. Ins. Deutschl. iii. 129. 5 (1848).

(*Cercus rubicundus*, Dej. Cat. 136, ed. 1837.)

*Cateretes rufilabris*, Steph. Illustr. Brit. Ent. Mand. iii. 54. 2 (1830).

— *Caricis*, Steph. Illustr. Brit. Ent. Mand. iii. 54. 10 (1830):

— *rubicundus*, Heer, Faun. Col. Helv. i. 411. 4 (1841).

*Brachypterus fulvus*, Erichs. in Germ. Zeitschr. iv. 232 (1843).

Profunde punctatus, niger, ore pedibusque rufis; prothorace lateribus rotundato, antrosum angustato. Long.  $\frac{4}{5}$ –1 lin., lat.  $\frac{1}{3}$  lin.

Var. A. *Cateretes Junci*, Steph. Illustr. Brit. Ent. Mand. iii. 54. 9 (1830).

Rufo-piceus, elytris nigris.

Var. B. *Cateretes pallidus*, Heer, Faun. Col. Helv. i. 411. 5 (1841).

Testaceus, unicolor.

Communis in Europa.

Scarcely half so large as *C. pedicularius*, more elongate and less convex. Black, shining, deeply punctate, with white pubescence. Mouth, antennæ, apex of the elytra, and legs reddish yellowish-brown. Antennæ one-fourth of the body in length, with a rather slender club. Head small, forehead flat. Thorax narrowed in front, nearly of the breadth of the elytra behind, sloping in a gentle curve to the posterior angles, which are obtuse. Scutellum large and rounded. Elytra distinctly and not very closely punctate.

The colour is variable, which has given rise to the above varieties A and B being described as distinct species.

I am unable to see any difference between this species and the specimens of Erichson's *Brachypterus fulvus* preserved in the Berlin Museum. Erichson himself remarks regarding the latter that it is very like the reddish varieties of the former, but can be distinguished, in addition to the generic characters, by its having the last two segments of the abdomen exposed. Now there must be some misapprehension here, because *Cercus rufilabris* likewise has the last two segments exposed. Erichson, however, specially refers, besides, to the generic characters as being those of *Brachypterus*; but as the specimen in the Berlin Museum is unique, and not in a state to allow of these characters being observed without sacrificing the specimen, I am inclined to think that Erichson must have taken them upon trust; and as it is, in every point that we can test, apparently identical with *C. rufilabris*, I have recorded my opinion that it is synonymous with that species. The only difference that I could perceive is that it seemed to be not quite so deeply punctate.

It is found all over the Continent and also in England.

### 13. CERCUS SERICANS.

Leconte, Proc. Acad. Nat. Sci. Philad. Feb. 1859, p. 69 (1859).

Oblongus, modice convexus, fuseus, punctatus, pube brevi cinerea sericans; capite thoraceque sæpe rufo-testaceis, hoc latitudine plus sesquiplo brevior, lateribus rotundatis marginatis; elytris thorace fere duplo longioribus; antennis pedibusque testaceis, illis articulo nono præcedente vix majore. Long. 1 lin., lat.  $\frac{1}{3}$  lin.

Habitat in California, prope Fort Tejon.

Longer and more slender than the preceding species of the genus, and provided with a closer and more silky cinereous short pubescence; punctate; brown, with the head and thorax often rufo-testaceous, and antennæ and legs testaceous. The club of the antennæ biarticulate, the ninth article being scarcely longer than the eighth. Thorax less than two-thirds as long as broad. Elytra about twice as long as the thorax.

Found near Fort Tejon in California. Dr. Leconte has been kind enough to supply me with a specimen, which I have placed in the British Museum.

### 14. CERCUS EXILIS (Laferté).

Parvus, subcylindricus, flavus, punctatus, pubescens. Long.  $\frac{2}{3}$  lin., lat.  $\frac{1}{4}$  lin.

Habitat in Cumana.

Small, narrow, cylindrical, not unlike a small *Carpophilus*. Yellow, punctate, and

pubescent. Antennæ with the club rather large and the articles moniliform. Head with a deep semicircular depression or canal in front at the base of the epistome, very faintly punctate, pubescent. Eyes large. Thorax subquadrate, the sides rounded, the anterior angles subrectangular, rounded; closely and irregularly punctate, pubescent; the posterior angles rounded; base truncate, margined. Scutellum small, smooth. Elytra subparallel, about a half longer than the thorax; darker at the apex; shoulders prominent, irregularly punctate. Apex truncate, slightly rounded. Exterior apical angles rounded. Abdomen paler; very little of the penultimate segment exposed above; fimbriæ distinct.

By some this has been mistaken for a *Rhizophagus* and named *R. adustus*.

From Cumana and Cuba.

(Subgenus AMARTUS.)

Leconte, in Proc. Acad. Nat. Sci. Philad. Nov. 1861, p. 343 (1861).

Palpi labiales articulo ultimo elongato-ovali (see Plate XXXII. fig. 4, e); unguiculi simplices; *mas* pygidio segmentulo anali aucto.

The outer lobe of the maxillæ is slender, not hooked at the point, but with a long terminal vesicle. Last article of the labial palpi elongate-oval; the maxillary palpi with the last article conical, a little longer than the preceding. The mentum is broad, emarginate in front. The labrum is emarginate; the mandibles flat, scarcely toothed. The club of the antennæ is 3-jointed and elongate. The second and third ventral segments are shorter than the first and fourth, the fifth is the longest; in the males a small but distinct dorsal segment is added. The tarsi are dilated; the claws slender, a little broader at the base, but not toothed.

15. *CERCUS RUFIPES*.

*Amartus rufipes*, Leconte, *loc. cit.*

Ovalis, parum convexus, nigro-piceus, helvo pubescens, confertim punctatus; prothorace longitudine fere duplo latiore, antice truncato, lateribus et basi rotundato, angulis posticis parum explanatis; elytris thorace sesqui longioribus, lateribus et apice late indeterminate rufo-testaceis; antennis pedibusque rufo-testaceis. Long.  $1\frac{2}{3}$  lin., lat.  $\frac{4}{5}$  lin.

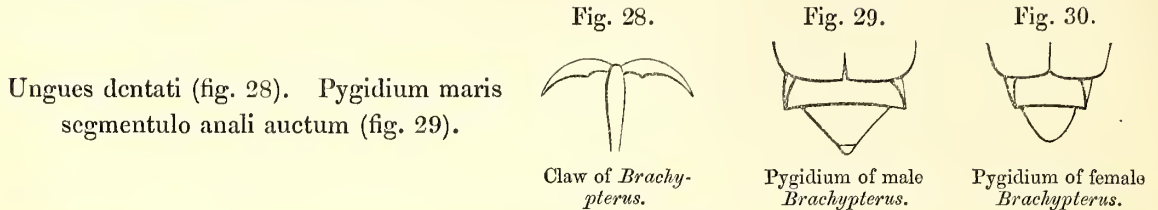
Habitat in California.

Compared with the rest of the *Cerci*, this species is large. It is oval and convex, blackish piceous, covered with a close silky griseous pubescence, thickly and equally punctate both above and beneath. The antennæ are as long as the head and thorax united. The thorax is nearly twice as broad as long, the sides and base rounded, and the posterior angles somewhat expanded. Scutellum oblong; angles rounded, truncate at the apex. The elytra a half longer than the thorax, with the shoulders lighter, and the sides and apex broadly margined with an indeterminate rufo-testaceous margin. Below sometimes concolorous and sometimes ferruginous.

Found at Mendocino and in the neighbourhood of San Francisco in California, and probably throughout the whole of California. It does not appear to be rare, as I received many specimens from Mr. Hepburn of San Francisco.

## Genus BRACHYPTERUS.

Kugellan, in Schneid. Mag. 506 (1792). Erichs. in Germ. Zeitschr. iv. 228 (1843). Sturm, Deutschl. Faun. xv. 16. taf. 290 (1844). Erichs. Naturg. Ins. Deutschl. iii. 130 (1848). Redtenb. Fauna Austriaca, no. 125. p. 162 (1849). Lacord. Hist. des Coléopt. ii. 292 (1854). Jacq. Duv. Gen. des Coléopt. d'Europe, 137 (1857-59).



This genus may be shortly characterized by having the claws toothed, and by the males having an additional anal segment or appendage. It may be further subdivided into two or three subgenera, depending upon the form of the thorax and of the last segment of the labial palpi; thus:—

	Posterior angles not embracing the elytra . . . . .	1
	Posterior angles embracing the elytra . . . . .	<i>Heterostomus</i> .
1 {	Elytra much longer than exposed dorsal segments of abdomen . . . . .	<i>Brachypterus</i> .
	Exposed dorsal segments of abdomen nearly as long as elytra . . . . .	<i>Brachyleptus</i> .

*Position and Affinities*.—CERCUS. BRACHYPTERUS. MYSTROPS.

## (Subgenus BRACHYPTERUS proper.)

Prothorax angulis posticis obtusis vel rotundatis. Elytra abdominis segmentis dorsalibus expositis multo longiora. Palpi labiales articulo ultimo ovato.

Labial palpi with the last article ovate. Thorax with the posterior angles obtuse or rounded, not embracing the base of the elytra. Elytra much longer than the exposed dorsal portion of the abdomen.

## 1. BRACHYPTERUS PUBESCENS.

Erichs. in Germ. Zeitschr. iv. 231. 4 (1843). Sturm, Deutschl. Faun. xv. 24. 4. taf. 191. fig. B (1844).

Erichs. Naturg. Ins. Deutschl. iii. 132. 4 (1848).

*Cateretes urticae*, var.  $\alpha$ , Illig. Käf. Preuss. 395. 2 (1798).

— —, var.  $\beta$ , Duftschm. Faun. Austr. iii. 140. 3 (1825).

— *glaber*, Steph. Illustr. Brit. Ent. Mand. v. p. 407 (1832). Newm. Ent. Mag. ii. p. 200 (1834).

*Cercus Urticae* (Dej. Cat. 136, ed. 1837).

Plumbeo-ater, nitidulus, punctatus, parcius albido pubescens, antennis pedibusque piceis vel nigris. Long. 1 lin., lat.  $\frac{1}{2}$  lin.

Habitat in Europa, sat frequens.

Black with a slightly leaden lustre, with a sparing adpressed whitish pubescence. Finely and rather deeply punctate. Antennæ about the length of the thorax, piceous, with the first two articles black. Head very deeply and almost rugosely punctate. Thorax

about the breadth of the elytra, a half broader than long, rounded on the sides, narrowed in front, truncate, straight before and behind, posterior angles rounded and obtuse. Scutellum large and semicircular. Elytra more than a half longer than the thorax. Abdomen with the fourth segment very short. About the same size and shape as *B. Urticæ*, but readily distinguished by its leaden-black colour and whitish-grey pubescence, with legs and antennæ so dark as usually to appear black, while *B. Urticæ* has a brownish hue mixed with its black, and its legs, antennæ, and mouth are reddish brown, the basal joint of the antennæ excepted, which is usually black, and also sometimes the club, which is generally darker than the preceding articles of the antennæ.

Found in flowers and on plants all over Europe. Common. Not rare in Britain.

## 2. BRACHYPTERUS UNICOLOR.

Küster, Käf. Eur. xviii. 29 (1849).

Niger, nitidus, sparsim fortiter punctatus, subtiliter cinereo pubescens; prothorace lateribus rotundato, angulis posticis rotundatis, anticis rectis; elytris indistincte virescente micantibus. Long.  $\frac{4}{5}$ –1 lin., lat.  $\frac{1}{2}$  lin.

Habitat in Sardinia, Sicilia, &c.

Black, shining, sparingly but deeply punctate, faintly cinereo-pubescent. Thorax rounded on the sides, the posterior angles rounded, the anterior right-angled. Scutellum large, rounded at the apex, punctate, except on the margins. Elytra indistinctly brassy green. Antennæ and legs black.

The only distinguishable differences which M. Küster gives between this species and *B. pubescens* are, that it is smaller, more slender, blacker, less closely pubescent, with the second article of the antennæ reddish brown and the elytra faintly metallic green. It is to be observed, however, that the colour of the basal articles of the antennæ is a character of little or no value. Nine out of ten specimens of *B. pubescens* which have the antennæ reddish have the second article lightest in colour. The basal joint is usually dark, the second rufous, and the rest become gradually darker as they approach the club, which is generally piceous.

I have not seen any undoubted specimens of M. Küster's types; but I have received from Herr von Kiesenwetter a specimen of a species, taken in Sicily, which he thought was Küster's *unicolor*. This specimen, however, is larger and more convex, instead of being smaller and more slender, than *B. pubescens*, and the second article of the antennæ does not differ in colour from the others. It almost looks as if Küster had confounded his specimens, and described his *unicolor* from specimens of *pubescens*, reversing the characters in his contrast. My specimen is somewhat smoother than *pubescens*, the punctuation being rather more widely scattered; it is also decidedly more convex, and has the anterior angle of the thorax more right-angled and less inflexed; but, with these exceptions, I can see little difference between them.

For the above reasons, I am inclined to think that the Sicilian species which I received under that name is Küster's *unicolor*, and I have therefore recorded it as such, merely altering his diagnosis so as to leave the above points open.

## 3. BRACHYPTERUS URTICÆ.

Kugellan, in Schneid. Mag. 561. 2 (1794). Erichs. in Germ. Zeitschr. iv. 231. 5 (1843). Sturm, Deutschl. Faun. xv. 28. 5. taf. 291. fig. C (1844). Erichs. Naturg. Ins. Deutschl. iii. 132. 5 (1848).

*Dermestes Urticæ*, Fabr., Payk.

*Cateretes Urticæ*, var.  $\beta$ , Illig. Käf. Preuss. 395. 2 (1798).

— — —, Gyll, Duftschm., Steph., Heer, Schönh.

*Strongylus abbreviatus*, Herbst, Käf. iv. 190 (1792).

*Scaphidium scutellatum*, Panz. Faun. Germ. 4. 11.

*Meligethes erythropus*, Marsh., Steph.

*Cercus rufilabris* (Dej. Cat. 136, ed. 1837).

Piceo-subæneus, nitidus, tenuiter griseo pubescens, punctatus, antennis pedibusque rufis; prothorace lateribus postice sinuatis. Long.  $\frac{2}{3}$ –1 lin., lat.  $\frac{2}{5}$  lin.

Habitat in Europa frequentissimus.

Var. A. Totus piceus, prothorace lateribus postea minus sinuatis et minus reflexis.

Habitat in America boreali.

Convex, brown, with a slight brassy tinge, sparingly clothed with griseous pubescence, moderately deeply punctate. The thorax nearly as broad as the elytra, but only half as long, with the sides rounded, but sinuate in front of the posterior angles, which are expanded and somewhat reflexed, truncate both before and behind, and the posterior angles obtuse. The elytra somewhat tumid. The fourth segment of the abdomen very short. Antennæ and legs rufous. The mouth, and apex of the thighs reddish brown.

The commonest of all the species; feeding in great numbers everywhere in Europe on the nettle (*Urtica dioica*), especially when in bloom. It is found also in North America. Dr. Leconte has sent me a specimen from Pennsylvania, which only differs in the following respects: it is a little smaller, and wholly piceous; the sides of the thorax before the posterior angles are less sinuated and the angles less reflexed. These differences are too slight to allow me to do more than record it as a variety (var. A, *suprà*).

## 4. BRACHYPTERUS AFFINIS.

*Cateretes affinis*, Heer, Faun. Col. Helv. i. 411 (1841).

“Statura omnino *B. Urticæ*, oblongo-ovatus, castaneus, confertim subtilius punctatus; pronoto transverso, angulis posticis rotundatis; antennis pedibusque testaceis. Long.  $\frac{7}{8}$  lin.

“Habitat in montibus subalpinis prope Linthal.”

I have not seen this species. Prof. Heer says it is exceedingly like *B. Urticæ*, but is distinguished from it by a finer punctuation and by its thorax being a little longer.

Subalpine districts in Switzerland (Linthal, &c.).

## 5. BRACHYPTERUS FULVIPES.

Erichs. in Germ. Zeitschr. iv. 231 (1843).

Statura *B. Urticæ*, niger, nitidus, dense punctatus et cinereo pubescens; thorace lateribus medio subangulatis; pedibus antennisque rufis, his clava picea. Long.  $\frac{4}{5}$  lin.

Habitat in Sardinia.

Similar in size and form to *B. Urticæ*; black, shining, closely punctate, and clothed with a cinereous pubescence. Thorax a little narrower than the elytra; sides rounded, and with a slight angle at the middle, nearly equal in breadth in front and behind, posterior angles obtuse. Elytra a half longer than the thorax. Legs, antennæ, and mouth rufous; the club of the antennæ piceous.

The deeper punctuation and close cinereous pubescence are the most distinguishing characters in this species. The only specimen I have seen is in the Berlin Museum, and was brought from Sardinia.

#### 6. BRACHYPTERUS PALLIPES.

Affinis *B. fulvipedi*, Erichs., leviter punctatus et tenuiter pubescens, niger, thorace piceo, elytris parum cupreo micantibus; thorace lateribus rotundato et postice explanato; labro nigro; antennis pedibusque pallide testaceis, clava antennarum obscuriore. Long.  $\frac{2}{3}$  lin.

Habitat in Algeria.

Nearly allied to *B. fulvipes*, Erichs., but rather smaller. The thorax with the sides rounded and more expanded posteriorly, and only beginning to be rounded-in at the very base, while in *B. fulvipes* the rounding-in commences at about a quarter of its length from the base.

From Algeria.

#### 7. BRACHYPTERUS LABIATUS.

Erichs. in Germ. Zeitschr. iv. 232 (1843).

*B. Urticæ* similis, minor, niger, nitidus, parce punctatus, tenuiter pubescens; elytris æneis; labro, pedibus antennisque testaceis, his clava nigra. Long.  $\frac{3}{5}$  lin.

Habitat in Sardinia.

Very similar to *B. Urticæ*, but scarcely more than half its size. It is black, shining, sparingly punctate, sparingly pubescent. The elytra with a slight brassy tinge. The labrum, the legs, and antennæ testaceous, except the club of the latter, which is black. The punctuation of the thorax is rather more distinct than that of the elytra, while in *B. Urticæ* it is about equal in both.

The only specimens I have seen are now in the Berlin Museum, and were received from Sardinia.

#### 8. BRACHYPTERUS MERIDIONALIS.

Küster, Käf. Eur. xv. 38 (1848).

“*B. niger*, nitidus, planiusculus, tenuiter griseo pubescens, subtiliter punctatus; elytris subtilissime transversim rugulosis; antennis piceo-nigris, clava pedibusque rufopiceis. Long.  $\frac{3}{4}$  lin., lat.  $\frac{2}{5}$  lin.

“Habitat in Hispania.”

I have not seen this species; but Küster says that it is flatter than its allies, that the pubescence allows the shining surface to appear through it, and that the elytra are marked with transverse acicular markings,—characters by no means confined to this

species (if it be a species), but shared by *Brachypterus Urticæ*, *B. pubescens*, and most of the other species.

From Carthageria in Spain.

#### 9. BRACHYPTERUS LUCASII.

*B. pubescens*, (Schüppell, ined.) Lucas, Explor. Scient. de l'Algérie, Zool. ii. 219 (1849).

Ater, flavo pilosus; capite thoraceque punctatis; clytris fortiter granariis. Long.  $\frac{2}{3}$  lin., lat.  $\frac{1}{3}$  lin.

Habitat in Algeria.

Much smaller than *B. cinereus*. Black; clothed with yellow hairs, longish and sparingly scattered. Head punctate, the punctures small, close, and very deeply impressed; mouth black; the antennæ black, and each article sparingly sprinkled with longish yellow hairs. Thorax broader than long, rounded anteriorly and posteriorly, as well as the sides, which are dilated and very lightly edged; it is sprinkled with rather large rounded punctures tolerably deeply marked, and less close than those on the head. Scutellum smooth. Elytra convex and strongly shagreened. The underside of the body as well as the legs are of the same colour as above, and clothed with scattered longish yellowish hairs.

M. Lucas has described this species under the name of *B. pubescens*, forgetting that that name was already preoccupied. I have been obliged, therefore, to give it another name, and I have thought I could not do better than dedicate it to that amiable naturalist himself.

From Algeria.

#### 10. BRACHYPTERUS ROTUNDICOLLIS.

Piceus, subæneus, nitidus, punctatus, griseo pubescens; thorace coleopteris paulo angustiore, lateribus rotundato; elytris sat longis et angustis; ore et antennis rufis, clava fusca; pedibus testaceis. Long. 1 lin., lat.  $\frac{1}{3}$  lin.

Habitat in Syria et Europa meridionali.

Piceous, with a slight brassy hue, shining, densely punctate, clothed with a long griseous pubescence. Thorax slightly narrower than the elytra, with the sides and all the angles rounded; the sides scarcely (if at all) expanded, and not sinuate. Elytra not very convex, rather long. The antennæ (except the club, which is fuscous), mouth, and legs rufous. Pygidium and posterior angles of the penultimate segment alone exposed.

Found in Syria, Germany, &c.

#### 11. BRACHYPTERUS TROGLODYTES.

Piceus, subæneus, nitidus, tenuiter griseo pubescens, punctatus; thorace lateribus rotundato, angulis posticis obtusis, rotundatis, haud sinuatis, explanatis; clytris humeris prominentibus, apice oblique truncato. Long.  $\frac{3}{4}$  lin., lat.  $\frac{2}{5}$  lin.

Habitat in California.

About the size of *B. Urticæ*; it is allied to it, but may be distinguished from it by the sides of the thorax not being sinuate behind. It is piceous, with a faint brassy tinge, shining, punctate, clothed with a slight griseous pubescence. The head has an

impression on each side between the eyes, and a short faint longitudinal line on the vertex. The thorax has its sides rounded and not sinuate, the posterior angles obtuse, rounded, and expanded. Scutellum rather large. Elytra with prominent shoulders, with the sides gently rounded and margined, the apex obliquely truncate. Pygidium and posterior angles of the penultimate segment alone exposed. Antennæ and legs red.

From California. Communicated to me by M. l'Abbé de Marseuil.

12. *BRACHYPTERUS GLOBULARIUS* (Reiche).

Piceus, subæneus, nitidus, confertim punctatus, parce griseo pubescens; thorace coleopteris paulo angustiore, lateribus rotundatis, haud sinuatis, explanatis, disco convexo; elytris fortiter, disco lævius punctatis, apice singulis rotundatim truncatis; antennis, ore pedibusque rufo-piceis. Long.  $\frac{4}{5}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in America boreali; Mexico; Connecticut, &c.

Closely allied to *B. Urticæ*. Piceous, with a slight brassy lustre, shining, thickly punctured, sparingly clothed with griseous pubescence. Thorax slightly narrower than the elytra, with the sides rounded, not sinuate, expanded, the disk abruptly convex from the expanded part, with a slight impression on each side of the middle, declining towards the base, with the anterior angles nearly right-angled and the posterior rounded. The scutellum less punctate. The elytra thickly punctured, but the disk less so, the sides gently rounded, and the apex of each elytron truncate and rounded. The mouth, antennæ, and legs rufo-piceous.

Specimens from Connecticut and Mexico are in the Marquis de Laferté's collection.

13. *BRACHYPTERUS FLAVIPES*.

Niger, confertissime punctatus, mediocriter cinereo pubescens; antennis pedibusque flavis; prothorace antice posticeque rotundato. Long. 1 lin., lat.  $\frac{1}{2}$  lin.

Habitat in Brasilia.

Oblong, convex, black, thickly and rather deeply punctate, clothed with a moderate cinereous pubescence. Antennæ short, not much longer than the head, yellow. Prothorax arched and rounded both at the anterior and posterior angles, narrowest in front, at its broadest part nearly but not quite so broad as the elytra. Scutellum large, truncate, nearly quadrangular. Elytra not much longer than the thorax. The segments of the abdomen large; the penultimate as long as the last. All the legs yellow.

Collected near Rio Janeiro by the Rev. Hamlet Clark, who has been kind enough to sacrifice his unique specimen to me, in order that it may be preserved in the British Museum.

14. *BRACHYPTERUS TESTACEUS*.

Boheman, Kongl. Svenska Fregatten 'Eugenies' Resa omkring Jorden (Voyage of the Royal Swedish Frigate 'Eugenie,' made in the years 1851-1853), p. 39 (1857-58).

Flavo-testaceus, parum nitidus, crebre et breviter punctulatus, parce cinereo pubescens; oculis nigris; thorace lateribus fere parallelis, leviter rotundatis, angulis rotundatis;

scutello sat magno; elytris vix thorace sesqui longioribus; tibiis apice valde dilatatis. Long. 1 lin., lat.  $\frac{1}{3}$  lin.

Habitat in Victoria, in Australia.

Flavo-testaceous, only slightly shining, thickly punctate, and cinereo-pubescent. The thorax transverse and convex, and, viewed directly from above, its sides almost parallel, gently rounded, the angles rounded. Scutellum rather large. Elytra not quite a half longer than the thorax. Tibiæ much dilated at the apex.

This might at first be mistaken for a *Cercus*, but the characters of the claws and mouth show that Prof. Boheman has rightly placed it in this genus.

From Victoria, in Australia.

# 15. BRACHYPTERUS FLAVICORNIS.

Küst. Käf. Eur. xv. 40 (1848).

Niger, nitidulus, parce punctatus, tenuiter pubescens; prothorace lateribus rotundato, angulis posticis obtusis; elytris eupreo micantibus; mandibulis, antennis totis pedibusque ferrugineo-rufis. Long.  $\frac{3}{4}$  lin., lat.  $\frac{2}{5}$  lin.

Habitat in Italia.

Black, somewhat shining and brassy, sparingly punctate and thinly cinereo-pubescent. Thorax with the sides rounded and posterior angles obtuse. Elytra convex in the middle, narrowed behind. Mandibles, antennæ, and all the legs ferruginous.

According to Küster, this species is "very near to *B. fulvipes* and *B. labiatus*; distinguished from the first by the sides of the thorax, which are tolerably rounded, from the last by the black labrum, and from both very distinctly by the antennæ being unicolorous." It appears to me to be nearer to *B. Urticæ*.

I have received a specimen from Count Motsehulsky, bearing this name, which corresponds with Küster's description. It is of the size and form of *B. Urticæ*, and has a very slight brassy lustre on the elytra and a longish scattered hoary pubescence.

This forms the passage between this subgenus and the next, but has more of the character of this. The base of the thorax is sinuate, and consequently the posterior angles are turned a little back, but only in a small degree. The elytra, however, are long and the exposed part of the abdomen short.

From Italy. I have placed my specimen in the British Museum.

*Note.*—The species described by Prof. Boheman, in his 'Insecta Caffraria,' under the name of *Brachypterus subæneus*, does not belong to this tribe. It has a great outward resemblance to *B. cinereus*, but is truly one of the *Strongylinæ*.

## (Subgenus HETEROSTOMUS.)

Jacq. Duv. Gen. des Coléopt. d'Europe, ii. 138 (1857-59).

Thorax basi elytris haud multum angustior, angulis posticis plus minusve retroaspectantibus. Palpi labiales articulo ultimo ovato. (See Plate XXXII. fig. 7, e.)

The base of the thorax is bisinuate, the posterior angles embracing the elytra, which are short and scarcely wider than the thorax. The last article of the labial palpi ovate.

## 16. BRACHYPTERUS GRAVIDUS. (Plate XXXII. fig. 7.)

Erichs. in Germ. Zeitschr. iv. 230. 2 (1843). Sturm, Deutschl. Faun. xv. 22. 2. taf. 90 (1844). Erichs.

Naturg. Ins. Deutschl. iii. 130. 2 (1848).

*Cateretes gravidus*, Illig., Duftschm., Schönh.

— *pulicarius*, Gyll. Ins. Suec. i. 246. 1. Heer, Faun. Col. Helv. i. 410. 1 (1841).

— *Linariæ*, Steph. Illustr. Brit. Ent. Mand. iii. 53. 4 (1830).

*Dermestes gravidus*, Payk. Faun. Suec. iii. 448 (1798).

*Scaphidium agaricinum*, Herbst, Käf. v. 134 (1793).

*Brachypterus scutellatus*, Kugellan, in Schneid. Mag. 561. 3 (1794).

*Cercus atratus* (Dej. Cat. 136, ed. 1837).

Niger, opacus, confertissime punctatus, fusco pubescens, antennis pedibusque rufis.

Long.  $1\frac{1}{3}$ – $1\frac{1}{2}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in Europa.

Oblong-ovate, rather convex; black, opaque, very thickly punctate, covered with a fine brownish pubescence; antennæ and anterior legs reddish brown. The thorax narrowed in front, with its sides rounded, the base bisinuate, and the character of the subgenus fully displayed, viz. the posterior angles projecting backwards and embracing the shoulders. Scutellum large, triangular. Elytra a third longer than the thorax. Abdomen with the fourth segment as long as the fifth.

Found upon flowers. Not rare on the continent of Europe. Not common in Britain.

## 17. BRACHYPTERUS VESTITUS.

Kiesenw. in Stett. Ent. Zeit. (1830) p. 223, and Ann. Soc. Ent. France, sér. 2. ix. 578 (1851).

Niger, opacus, confertissime punctatus, griseo pubescens; antennis pedibusque testaceis.

Long.  $1\frac{1}{2}$ –2 lin., lat.  $\frac{3}{4}$  lin.

Habitat in montibus Pyrenæis orientalibus.

Allied to *B. gravidus*, but larger; the pubescence stronger, denser, of a different colour, being griseous instead of brownish; the thorax smaller and narrower, and its posterior angles obtuse.

Herr von Kiesenwetter has been kind enough to supply me with typical specimens, which are now in the British Museum. Count Motschulsky sent me a specimen of this species under the name of *Carpophilus fuscus*, but I am not aware whether this name has been published or not.

From the Eastern High Pyrenees.

## 18. BRACHYPTERUS LATICOLLIS.

Küst. Käf. Eur. xv. 35 (1848).

“*B. niger*, opacus, confertissime punctatus, rufescente pubescens; thorace elytris latiore; antennis pedibusque anticis rufis. Long. 1 lin., lat.  $\frac{2}{3}$  lin.

“Habitat in Dalmatia.”

Not having seen this species, I can only reproduce Küster's description: he says it is “about half the size of the smaller individuals of *B. gravidus*, more arched, and dis-

tinguished by the brownish-reddish, sparing, slightly finer pubescence and the broad thorax."

From Spalato in Dalmatia.

#### 19. BRACHYPTERUS CINEREUS.

Erichs. in Germ. Zeitschr. iv. 231. 3 (1843). Sturm, Deutschl. Faun. xv. 24. 3. taf. 91. fig. A (1844).

Erichs. Naturg. Ins. Deutschl. iii. 131. 3 (1848).

*Cateretes cinereus*, Heer, Faun. Col. Helv. i. 413. 9 (1841).

*Cercus pulicarius*, Latr. Gen. Crust. et Ins. ii. 15. 1. (Dej. Cat. 136, ed. 1837.)

Plumbeo-niger, confertissime punctatus, dense cinereo pubescens, antennis pedibusque anterioribus rufis. Long.  $\frac{3}{4}$ - $1\frac{1}{5}$  lin., lat.  $\frac{2}{5}$  lin.

Habitat in Europa.

Distinguished from the foregoing species by its colour, which, although black like them, has a sort of leaden lustre, and by having longer and dense grey pubescence, which gives it a hoary appearance readily recognizable. Its sides are less rounded, and the posterior angles of the thorax do not project so much behind and are more obtuse.

Found over most of Europe, but not in Britain.

#### 20. BRACHYPTERUS ANTIRRHINI (Chevr.).

*B. cinereo* affinis, major et paulo longior, plumbeo-niger, densissime cinereo pubescens, confertim punctatus, convexus; antennis pedibusque anticis et mediis rufo-piceis. Long.  $1\frac{1}{8}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in Algeria.

Closely allied to *B. cinereus*, but larger and more closely clothed with cinereous pubescence, and with the middle as well as the anterior legs red.

From Algeria. I have received a single specimen from M. Chevrolat, which I have placed in the British Museum.

#### (Subgenus BRACHYLEPTUS.)

Motschulsky, Remarques sur sa Collection de Coléoptères Russes, in Bull. Soc. Imp. Mosc. xviii. 54 (1845)\*.

Thorax plus minusve rotundatus, haud elytra amplectens. Elytra brevissima, humeris prominentibus. Abdomen sine segmentulo anali in utroque sexu.

The essential characters of this subgenus are the rounded thorax not embracing the elytra, and the elytra very short and with very prominent shoulders. All the species

\* Count Motschulsky proposed a new genus under this name for his species *B. canescens* and for *Strongylus? tinctus*, Mann., taking as his characters the shortness of the elytra and the more globular form of the club of the antennæ. The latter character, however, is an error. Neither of the species he mentions has the club of the antennæ globular; on the contrary, it is constructed on the same fashion as in all the rest of the *Brachypteridæ*, forming an elongate club similar to the club of *Hercules*, and not like a ball or plate on the end of a stick as in most of the other *Nitidulariæ*. The club in *B. canescens* is, no doubt, a little more dilated than in the others, but has still the elongate character of the club of the *Brachypteridæ*. But, although these characters will not suffice to characterize the Section, the division seems good, and sufficiently recognizable from the other characters above given.

described have the last article of the labial palpi cylindrico-ovate; but as the absence of this character alone would not remove them from it, and as it is very possible that in any new species which may be found the palpi may be differently formed (seeing that there is some variation in its proportions in other species of *Brachypterus*), I have thought it better not to include it among the above characters. There appears to be no additional anal appendage in either sex in this subgenus.

\* Thorax subglobose and considerably narrower than the elytra.

21. *BRACHYPTERUS QUADRATUS*. (Plate XXXII. fig. 6.)

Creutz. in Illig. Mag. vi. 337 (1807). Erichs. in Germ. Zeitschr. iv. 230 (1843). Sturm, Deutschl. Faun. xv. 19. taf. 290 (1844). Erichs. Naturg. Ins. Deutschl. iii. 130 (1848).

Niger, opacus, cinereo pubescens, confertissime punctatus; prothorace angustato, postice rotundato. Long. 2 lin., lat.  $\frac{2}{3}$  lin.

Habitat in Austria et Europa meridionali: rarior.

Black, opaque, very densely punctate, thickly clothed with grey hairs. Antennæ convex, fully as long as the thorax, with the last three articles enlarged, but not into a rounded club. Thorax narrower than the elytra, rather shorter than broad, in front truncate, straight, anterior angles obtuse, rounded at the sides, somewhat narrowed behind, the base strongly rounded. Scutellum elongate, rounded at the apex. Elytra about a third longer than the thorax, together widely emarginate, the shoulders projecting prominently on each side. The fimbriæ of the penultimate dorsal segment of the abdomen broad and strongly marked. Legs brownish black.

Austria and the south of Europe.

22. *BRACHYPTERUS CANESCENS*.

Motsch. Bull. Soc. Imp. Mosc. xviii. 54 (1845).

Affinis *B. quadrato*, sed duplo major; prothorace subsexangulari, basi truncato, lateribus rotundatim angulato; cæteris fere ut in *B. quadrato*. Long.  $2\frac{1}{2}$  lin., lat.  $1\frac{1}{3}$  lin.

Habitat in Armenia et Russia meridionali.

There is little difference between this insect and *B. quadratus* except in size and in the more angular form of the thorax. The sides of the thorax are so much bent in the middle as to make it almost hexagonal; its base is truncate and narrow, the posterior angles obtuse and rounded, the sides obtusely rounded, and the anterior angles obtuse and rounded.

From South and Eastern Europe, extending into Asia.

\*\* Thorax transverse, scarcely narrower than the elytra.

23. *BRACHYPTERUS TINCTUS*. (Plate XXXII. fig. 8.)

*Strongylus? tinctus*, Mann. Bull. Mosc. 1843, p. 255.

Oblongus, convexus, subopacus, crebre punctatus, cinereo pubescens, niger, elytris nigris vel obscure rubro-ferrugineis, cum lateribus, basi et sutura nigris; prothorace

basi utrinque oblique sinuato, angulis posticis rotundatis; elytris thorace parum longioribus, humeris prominentibus; antennis pedibusque ferrugineis. Long.  $2\frac{1}{2}$  lin., lat.  $1\frac{1}{4}$  lin.

Habitat in California.

Oblong-square-shaped, more particularly the elytra, convex, thickly punctate, clothed with cinereous pubescence; black, or sometimes with the elytra more or less reddish brown, the sides, the base, and the suture around the scutellum being black. Antennæ with the club not very thick. The thorax with the base extending back in the middle like a broad lobe and obliquely sinuate on each side, disk sinuate behind on each side of the lobe, sides straight behind and narrowed in front, the angles rounded. The posterior lobe is more developed in some specimens than in others, and gives a different aspect to the insect according to whether it is closely applied to the base of the elytra or separate and with the head and thorax bent down. Scutellum small. The elytra only a little longer than the thorax, shoulders prominent. The penultimate dorsal segment of the abdomen with very distinct fimbriæ. Pygidium large, sinuate, and acuminate. Antennæ and legs ferruginous.

From North-west America—apparently found all along the coast from Sitka, whence it was first received by Mannerheim, to San Francisco in California, Mr. Hepburn having sent me specimens from that neighbourhood.

First made known by Mannerheim, who referred the species to the genus *Strongylus* with doubt,—as he says, from not being acquainted with the genera *Brachypeplus*, *Colopterus* (Erichson's first published name for *Colastus*: see Wiegmann's Archiv, 1842), or *Cillæus*, to some one of which he seemed to think it might be referred, he retained it under Dejean's large genus *Strongylus* as most likely to cover it. I have seen a typical specimen from Mannerheim himself in Professor Boheman's collection, which enables me to allot it with certainty to its proper place.

#### 24. BRACHYPTERUS FERRUGATUS.

*Br. tincto* affinis. Differt clava antennarum minus dilatata, elytris parum brevioribus, creberrime punctatis, minus nitidis. Totus ferrugineus, interdum partibus obscurior. Long.  $2\frac{1}{4}$  lin., lat. 1 lin.

Habitat in Oregon.

Allied to *B. tinctus*, but distinct. The antennæ are almost without a club, the last three articles being only a very little and gradually thickened, the whole having a monili-form appearance. Elytra rather shorter than in *B. tinctus*. It is wholly ferruginous, but specimens occur with the head and thorax and the vicinity of the scutellum dark. The punctuation is very close and deep, and the whole surface is clothed with a light flaxen-coloured long pubescence.

Found in Oregon by Mr. Jeffrey, the collector sent out in 1850 by the Edinburgh "Oregon Botanical Association" to collect plants and seeds in British Columbia, Oregon, and California.

(Genus *incertæ sedis*.)

Genus CALONECRUS.

Thomson, Arch. Ent. i. 117 (1857).

Antennæ undecimarticulatæ, duobus ultimis articulis liberis, vel conglutinatis\*. Caput liberum, sine sulcis antennariis. Oculi modici, haud basin capitis attingentes. Epistoma porrectum. Labrum emarginatum. Maxillæ forsan bilobæ, lobis conglutinatis. Ligula paraglossis vel alis membranaceis, ovatis, biplicatis. Elytra haud striata. Abdomen supra segmento ultimo solum exposito, fœminis? anali segmento auctum; primo et ultimo segmento longioribus et æqualibus, cæteris modicis et æqualibus; fimbriis vix visis.

Body elongate. Head free, without antennal grooves; eyes moderately large, not reaching to the base of the head. Antennæ with the first article elongate, stout, and dilated; second shorter and smaller; third longer; fourth to eighth small and nearly equal, gradually moniliform and a little broader; ninth short and broad, and forming the first article of the club, but more of the size and shape of the eighth article in other species of *Nitidulariæ*; the rest of the club either composed of two free articles, or apparently composed of only one article, but really of two united. Labrum emarginate. Clypeus distinct. Epistome projecting. Mandibles bidentate; inner side behind the teeth bearded. Maxillary lobes composed of two consistences—corneous and membranous—the former reaching from the base nearly to the apex, the latter oblique and confined to the apex. It has occurred to me that, as in the last articles of the antennæ in the species in which these are united, there may here be two lobes soldered together into one; it is short, bearded at the apex and on the inner side. Maxillary palpi with the first article small, second very large and dilated, third smaller and shorter, fourth conical or pointed and narrow. Labial palpi with the first article small, the second longer, the third elongate elliptic oval. Ligula scarcely extending beyond the base of the labial palpi, but apparently composed of two parts, like a pair of labial lobes; the membranous lobes of the ligula large, rounded, and apparently double. Mentum with two abruptly projecting teeth. Thorax nearly hexagonal, margined, not equal to the elytra in breadth. Scutellum moderate, triangular. Elytra elongate, attenuate at the apex, sides enclosing the abdomen, not margined, not striated. Abdomen above with only the pygidium and the margin of the penultimate segment exposed, and below with the first and last segments largest, the rest moderate and equal. In one of the sexes (supposed to be the female) there is an additional anal segment to the abdomen. Fimbriæ scarcely visible from above. Prosternum not very prominent, resting on the mesothorax; the thorax without axillary pieces. There is a slight eminence in the middle at the posterior part of the metathorax, where it separates towards the trochanters of the posterior legs: from its position, the name of 'umbilical point' suggests itself for this papilla. The coxæ of each pair of legs are nearly equally distant from each other. Tarsi dilated.

\* M. Thomson describes the antennæ as being only ten-jointed in his species (*C. Wallacei*); but on careful examination a line of separation can be easily distinguished near the base of the last article, showing that it is composed of two articles; and in a second, very closely allied, species described by Mr. Pascoe under the name of *C. rufipes*, the separation is complete and normal as in other *Nitidulariæ*.

The ligula and its membranous lobes are of especial interest in this genus. Their form, as I made them out, will be seen in Plate XXXII. fig. 9, *c*. I have only, however, had the opportunity of making one dissection of these, and I have figured what I thought I saw. I have thought it better to do this, even although I should have been mistaken, than to stop inquiry as to this apparently singular structure. It will be seen, from the figure, not only that the ligula appears to be broken into two lobes (which is doubtless the result of fracture from the pressure of the slides between which I had placed it for examination), but that its membranous lobes or wings appear to be double; and they certainly had a double action or motion. Its food and mode of life may in some measure account for these peculiarities. I believe it will be found that all insects which feed upon the juices of trees or fruits are provided with special organs for lapping it up, such as very much bearded maxillary lobes, &c. The insects of this genus feed upon a very thick stieky resin or juice of about the consistence of turpentine, called "Kruyin" by the Malays in Borneo, which is produced by a species of *Dipterocarpus*. Mr. Wallace never found them but in this gum: if he took the insects out and placed them near the juice, they immediately made their way back to it, and burrowed into it until they became like flies in amber. He found the greatest difficulty in cleansing them from the gum (indeed, I had noticed that all the specimens which I had seen had gum adhering to them, which I accounted for to myself by supposing they had been carelessly gummed on paper and not cleansed), and the only medium by which he could get it off was oil. The mode of life of this insect being thus peculiar, we need not be surprised if we find some modification of the normal structure in its masticatory organs.

No species has puzzled me more, to assign its true position, than the present. My first idea was to place it where I now have; but on dissecting the mouth I found that it had apparently only one maxillary lobe—a circumstance which compelled me to seek another *locale* for it; and it was only when, by a more careful study of the maxillæ, I found that their lobes showed indications of being composed of two lobes united together, as was the case with the club of the antennæ, that I began to suspect that this might be its true position after all. Like the *Brachypteridæ*, it has no antennal grooves; like most of them, the maxillary palpi have the second article largest and the fourth smallest; and as in them, one of the sexes has an additional anal segment to the abdomen. The hexagonal thorax has the commencement of a parallel in *Brachyleptus tinctus*, and the texture, punctuation, and pubescence are somewhat of the same character in *Brachypterus* and *Calonecrus*. When Mr. Pascoe was kind enough to present me with his unique specimen of *C. rufipes*, I eagerly availed myself of its possession to dissect the mouth, in the hope that as in it those articles of the antennæ which were soldered together in *C. Wallacei* were free, so I might find the maxillary lobes there also separated into two; I did not find this, however, but merely the same structure as in the other.

I have, on the whole, thought this its fittest position; but I place it with diffidence, and merely provisionally.

CARPOPHILUS.

*Position and Affinities.*—BRACHYLEPTUS.

CALONECRUS.

MYSTROPS.

TRIMENUS.

1. *CALONECRUS WALLACEI*. (Plate XXXII. fig. 9.)

Thomson, Arch. Ent. i. 117. pl. 10. fig. 3 (1857). .

Elongatus, supra depressus, subnitidus, punctatus, pubescens, rufo-ruber; antennis, elytris pedibusque cyaneo-nigris; thorace basi quam apice latiore; elytris angulis posticis anguste incis, hinc dente acuto extus retro projiciente. Long.  $4-5\frac{1}{2}$  lin., lat.  $1\frac{1}{4}-2$  lin.

Habitat in Sarawak.

Elongate, above depressed, somewhat shining, pubescent, rufous-red. Antennæ, elytra, and legs black, or bluish black. Head lightly punctate. Thorax elongate, sparingly and faintly punctate, shining, narrower than the elytra, with the sides angled in the middle, making it nearly hexagonal, apex straight, base slightly bisinuate, the sides both before and behind the middle angulation strongly sinuate, but less so in the females (?) than in the males, anterior angles obtusely rounded, posterior obtusely right-angled, unequal on the surface, being wavingly depressed both before and behind the middle and on each side. Scutellum punctate. Elytra strongly but not very closely punctate, the punctures deepest towards the suture, widest a little before the middle, shoulders projecting, depressed transversely behind the shoulders and scutellum, longitudinally on each side of the suture, on the disk behind the first depression, and transversely at the apex, clothed with a long fine brownish woolly pubescence, thickest upon the shoulders and haunches; the sides turned in upon the abdomen, and broadest opposite the posterior coxæ, slightly margined; the suture for about two-thirds towards the apex has a well-marked sutural stria; apex truncate, slightly rounded, exterior apical angles with a narrow notch cut out, causing the outer side to appear like a large tooth projecting backwards, sutural angles rounded. Below finely punctate\* and pubescent. Legs punctate. Tarsi short and small. Males (?) smaller, narrower, and with the sides of the thorax more sinuate than in the females.

From Sarawak. Collected by Mr. Wallace, as already mentioned, in the thick gum of a species of *Dipterocarpus*.

Mr. Wallace found, in company with this insect, a larva which he (doubtless correctly) refers to this species. A description and figure of it will be given in the chapter to be devoted to the larvæ of this family.

2. *CALONECRUS LATICOLLIS*.

Valde affinis *C. Wallacei*, thorace planiore et latiore, apice quam basi paulo latiore, lateribus vix sinuatis; elytris pube cirratis, angulis posticis minus incis, et dente exteriore minus acuto; rufus, antennis, elytris pedibusque nigris. Long.  $4\frac{3}{4}$  lin., lat. 2 lin.

Habitat in Sarawak.

Nearly allied to *C. Wallacei*. It is duller, broader, and the thorax and elytra are flatter and more depressed. The thorax is nearly hexagonal, but it is a little broader at the apex than at the base, while in *C. Wallacei* it is decidedly and considerably broader

\* M. Thomson, in his description, says that the pygidium and underside are smooth (*lisse*); but in all the species they are decidedly punctate, although less deeply than on the thorax and elytra.

at the base than at the apex; the sides also are scarcely at all sinuate, instead of being, as in *C. Wallacei* (more especially in the males), sinuate both before and behind the dilatation in the middle. The elytra, besides being more depressed, are more dilated and rounded on the sides, and have the surface marked by inequalities, which are well indicated by tufts of long woolly brownish pubescence; these are separated from each other by transverse depressed spaces, one behind the shoulder, one along the apex, and one between these, interrupted on the disk, and further by an elongated depression alongside the suture, and the basal elevation is further separated by two oblique longitudinal depressions parallel to the sides of the scutellum, but at some distance from them.

It is rufous, with the antennæ, elytra, and legs black. The basal article of the antennæ, however, which is largely developed, has a thick tuft of reddish pubescence on the outer margin, and the last two united articles of the elub, instead of being rufous as in the other species, are black, with a tinge of red on the last only. The punctuation on the head and thorax is much fainter than in the other species. The thorax is more equal on its surface; it has a semicircular depression behind the head, and another concentric semicircular depression near the base, both with the concave side towards the head. Both the thorax and scutellum are more pubescent than in the other species, and, as already mentioned, the elytra are much more so. The elytra are considerably more thickly and closely punctate, and the excision at the exterior apical angle is more open. In the legs the base of the femora is reddish, and the thighs are not quite so thick as in *C. Wallacei*.

Collected with the other species by Mr. Wallace in Sarawak. I have only seen one specimen since I detected the differences characteristic of the species, and that was in the collection of Mr. Fry, who has obligingly ceded his specimen to me; but I have no doubt that many more unrecognized examples of this species must be standing in collections under the name of *C. Wallacei*, which have been sent home by Mr. Wallace mixed with that species, for I have vague recollections of examples with tufted pubescence on the elytra which did not attract my attention at the time, but which, on examination, will, I think, now be found to belong to this species.

### 3. CALONECRUS RUFIPES.

Pascoe, in Journ. of Ent. i. 98 (1861).

Valde affinis *C. Wallacei*; minor, minus nitidus, magis punctatus; antennis clava distincte triarticulata; thorace lateribus minus angulatis, disco minus impresso; rufus, elytris nigris, pedibus rufis. Long.  $3\frac{1}{4}$  lin., lat. 1 lin.

Habitat in Borneo.

A good species, although so much like *C. Wallacei*, that it might, if not carefully compared with it, be mistaken for a variety of that species. It possesses especial interest from the club of its antennæ showing the usual number of articles free, and not the last two united as in the two other species, thus confirming my conclusion that they are 3-jointed in these species. It is smaller than the smallest specimen of *C. Wallacei* which I have seen. Depressed above, rufous, with the elytra black. The head very thickly punctate. Thorax hexagonal as in *C. Wallacei*, but the lateral angles not nearly so wide

nor so angular, much more thickly punctate, subopaque, more equal on the surface of the disk, being without the waving inequalities and depressions upon it; the sides more strongly margined. Elytra much more thickly punctate, more flat and equal on the surface, black. Legs rufous.

From Sarawak. Found by Mr. Wallace, along with the two preceding species, in the gum of a *Dipterocarpus*.

## Tribe II. CARPOPHILIDÆ.

*Carpophilinae*, Erichs. in Germ. Zeitschr. iv. 233 (1843).

Maxillæ mala simplici. Labrum distinctum. Elytra abbreviata. Abdomen segmentis duobus vel tribus ultimis liberis.

The most easily seized character of this tribe is the short elytra, leaving two or more segments of the abdomen exposed,—a structure which distinguishes it from all the rest of the family except the *Brachypteridæ*; and from them they are separated by the single lobe of the maxillæ. As that, however, is an organ which it requires a dissection of the mouth to discover, some other more easily observed character is desirable; and an approach to such, although not one which can be laid down as without exception, will be found in the presence of antennal grooves in the *Carpophilidæ* and their absence in the *Brachypteridæ*, and in the club of the antennæ, which in the *Brachypteridæ* is gradually elongate and approaching to the form of Hercules's club, while in the *Carpophilidæ* it is ovate or rounded and abrupt.

A large number of this tribe are found upon flowers; others, whose flat depressed form well corresponds with the locality, under bark; one in bees' nests; and a good many in decaying fruits.

Head with mouth projecting. Antennæ inserted on each side at the base of the projecting clypeus, short, with the club large, oval, or round. Antennal grooves usually present, and converging; they are absent in *Mystrops*. Labrum bilobed. The mandibles are strong, and usually terminate in a sharp point, behind which lies a second smaller tooth, and behind that again a slight serration, generally effaced; but this is not absolutely constant: in *Mystrops* the mandible has no teeth at all, only a sharp point; in *Cillæus* it has numerous teeth; and the degree of prominence of the second tooth when it is present is very variable. At the base of the exterior of the mandible is a rounded condyle. The maxillæ are moderately broad, thin, and furnished with a close comb of hairs on the interior side. The maxillary palpi are variable in form, the terminal article usually largest. The ligula is corneous in the middle, with transparent lobes on each side, varying in form in the different genera and even in the different species, but usually extending obliquely forwards and outwards in a sort of elliptical wing-shape. The posterior apex of the prosternum blunt and obtuse, resting slightly on the mesosternum. The abdomen is sometimes convex, at others very much depressed. The breadth of the abdominal segments is variable in different genera, the pygidium being the largest: in some genera it has a fimbria, broad at the anterior margin, narrow

behind; in others it is narrow or scarcely visible. The other dorsal segments are in some genera provided with fimbriæ; in others they have them either very small or the suture between the dorsal and ventral parts of the segments is on the margin. The legs are in most species short and strong; the tibiæ finely pubescent, rather broad at the apex, with strong terminal spines; the feet short.

The tribe embraces four or five distinct forms, besides intermediate passages, all of which may again be broken up into subsections or subgenera. It might almost be a question whether the genus *Mystrops* should not be erected into a tribe or subtribe by itself, between the *Brachypteridæ* and the *Carpophilidæ*, on the strength of its elongate antennæ in the males and the absence of antennal grooves; but its affinities with the latter tribe seem too great to warrant this.

The dorsal segments of the abdomen furnish distinguishing characters by which to separate them, in the first place, into two pretty equal divisions, the one containing Erichson's genera *Mystrops*, *Carpophilus*, and *Conotelus*, and the other *Colastus*, *Brachypeplus*, and *Cilleus*. In the first of these divisions the abdomen is somewhat convex, and the pygidium has the fimbriæ narrow and more or less parallel to the margin, and often so little visible as to appear absent, as in *Carpophilus*. In the latter the abdomen is flat, and the pygidium has the fimbriæ broader in front, and curving gradually to the posterior margin, as in *Colastus*. Its absence or presence in the other dorsal segments furnishes a character by which to separate the *Colasti* from the *Brachypepli*. Other distinguishing characters enable any species to be easily referred to one or other of these divisions, viz.:—

Abdomen much depressed and flat. Exposed dorsal portion of abdomen usually much longer and never shorter than the thorax (about equal in <i>Colastus</i> ). Fimbriæ well marked at least on the pygidium, and, in most genera, on all the dorsal abdominal segments.	} LATE-FIMBRIATA. ( <i>Colastus</i> , <i>Brachypeplus</i> , <i>Cilleus</i> , &c.)
Abdomen slightly convex. Exposed dorsal portion of abdomen shorter than thorax. Fimbriæ either absent or very narrow and subparallel to the margin.	} ANGUSTE-FIMBRIATA. ( <i>Carpophilus</i> , <i>Conotelus</i> , &c.)

It matters little in what order these divisions are taken. On the one hand, *Mystrops* and *Carpophilus* are nearly related to the *Brachypteridæ*, and, if we look to their connexion with them, should come first. On the other, they are (especially through *Haptoncus*) not less nearly related to *Epurea*, the first genus of the following tribe, and, if we look to their relationship with them, should come last. Erichson and Lacordaire have endeavoured to reconcile both affinities by placing *Mystrops* first, and intercalating the *Brachypepli*, &c. (*Late-fimbriata*) between it and *Carpophilus*. I do not think, however, that *Carpophilus* should be separated from *Mystrops*, and I prefer therefore to place both together either at the head of the tribe or at the end. Either arrangement secures a perfectly natural connexion, and accords with the simple sectional characters which I have given above. To adopt Erichson's and Lacordaire's arrangement would require a new selection of characters for division, not difficult to find, but more complicated and less easily seized than those I have chosen. My first idea was to lead from *Brachypterus*,

through *Mystrops* and *Carpophilus*, to *Colastus*\*; but on further consideration I have resolved to place the *Carpophili* at the end instead of at the commencement of the tribe. It makes the transition from the *Brachypteridæ* less natural, but that to *Epurea* more so, and keeps the arrangement more in accordance with that followed in Lacordaire's 'Histoire des Coléoptères,' which in matters nearly equal is a point of some importance.

#### Section LATE-FIMBRIATA.

Fimbriæ on the pygidium large and distinct, on the other segments scarcely visible.

Exposed portion of abdomen about the length of the thorax. Lobes of ligula large and horn-shaped . . . . . *Colastus*.

Fimbriæ present in all the exposed dorsal segments of abdomen. Exposed portion of abdomen much longer than the thorax. Lobes of ligula not large nor horn-shaped.

Fimbriæ broad and curved . . . . . *Brachypeplus*.

Fimbriæ narrow and subparallel to margin of abdomen . . . . . *Halopeplus*.

#### Genus COLASTUS.

Erichs. in Germ. Zeitschr. iv. 236 (1843). Lacord. Hist. des Coléopt. ii. 294 (1854).

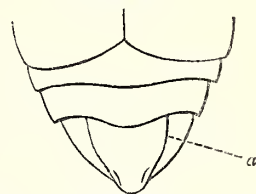
*Colopterus*, Erichs. in Wiegmann's Archiv, i. 149† (1842).

Labrum late bilobum. Ligula alis magnis. Abdomen segmentis primis quatuor brevibus, quinto maximo, sine segmentulo anali in utroque sexu, tribus ultimis expositis. Pygidium fimbriis marginalibus curvatis, antice latis, postice attenuatis; segmenta cætera fimbriis vix visis.

Very flat, depressed, and often broad. Head small and short.

Labrum broad and bilobed. Mandibles usually dentate at their extremity. Antennal grooves short and convergent. Antennæ short, not much longer than the head; first article large, second shorter than the third, fourth to eighth short and subequal, ninth to eleventh forming a moderately large oval club. Lobe of the maxillæ a little enlarged and rounded at the end, bearded at the point and on the inner margin; the labial palpi with the last article subsecuriform; the maxillary palpi with the last article cylindric and elongate. Ligula with remarkable broad horn-shaped membranous lobes (Pl. XXXIV. figs. 1 e, 2 e, & 3 e)—a peculiar form, which occurs again a long way off in *Psilotus*, one of the *Nitidulidæ*. Mentum broad, emarginate in front. Thorax broad, emarginate in front, bisinuate at the base, and at least as broad as the elytra. Scutellum rather large, subtriangular. Elytra truncate, leaving the last three segments of the abdomen exposed; the first four abdominal segments short and equal to each other; the fifth (pygidium) at least as large as all the rest united, and without any additional anal segment in either sex. Exposed portion of abdomen about as long as the thorax. Pygidium with the fimbriæ large and distinct; on the other segments they

Fig. 31.



\* It will be seen that this is the arrangement in the Plates, which were begun to be engraved before I finally resolved to follow the present arrangement.

† Erichson changed the name *Colopterus*, which he first proposed for this genus, to *Colastus*, on the ground of its being too near to that of *Colobopterus*, used by Mulsant for a subgenus of the *Aphodii*. In this I think he was unnecessarily fastidious. The name might very well have stood; and although I do not propose to revert to it, I see no objection to making use of it as a subgeneric name for one portion of the genus.

are very small, and confined to the anterior corners. Anterior tibiæ in some species distorted in the males. The first three articles of the tarsi dilated, clothed with hairs below. Claws simple.

EIDOCOLASTUS.  
COLASTUS.      { BRACHYPEPLUS.  
PSILOTUS.        { HYPODETUS.

*Position and Affinities.*—CARPOPHILUS.

For convenience' sake I propose to divide the genus into two subgenera, containing respectively

1. The species in which the anterior tibiæ are distorted in the males—CYLLOPODES; and
2. The species in which they are not so distorted—COLASTUS proper.

Subgenus CYLLOPODES (club-footed).

(See Plates XXXIII. fig. 9, and XXXIV. figs. 1 *c*\*, 1 *c*\*\*, 1 *c*\*\*\*.)

Caput latum, declive. Thorax postice quadratus, angulis plus minusve rotundatis. Maribus tibiæ anticæ angulatim distortæ et thorax elytris plerumque latior.

Head broad between the eyes, bent down, with the posterior angles rounded. The males have the anterior tibiæ angularly bent, and widened and distorted at the apex. In most of the species the males also have the thorax broader than the elytra.

1. COLASTUS RUPTUS. (Plate XXXIV. fig. 1 *c*\*.)

Erichs. in Germ. Zeitschr. iv. 237 (1843).

Testaceus, nitidus, tenuiter seriatim rufo-pubescent; thorace lateribus dilatato; elytris crebre seriatim punctatis, apice nigris. Long.  $1\frac{1}{2}$  lin., lat. 2 lin.

Habitat in Venezuela, Brasilia, &c.

Oblong, very slightly convex above, bright reddish testaceous, shining, slightly clothed with a pale reddish pubescence. Antennæ testaceous, with the club fuscous. Head densely and rather closely punctate. Thorax bisinuate at the base, gently rounded on the sides, pretty deeply but sparingly punctate; dilated in the males. Scutellum rounded at the apex, sparingly punctate. Elytra a half longer than the thorax, rather closely punctate and pubescent in rows, the apex black. Abdomen more densely punctate. The anterior tibiæ in the males distorted, as if broken at an angle below the middle, and abruptly dilated on the inner side.

Very like the next species, *C. posticus*, which is found in Mexico, and from which it differs in being pubescent and rather more coarsely punctate.

From Venezuela and Brazil, &c.

2. COLASTUS POSTICUS. (Plate XXXIV. fig. 1.)

Erichs. in Germ. Zeitschr. iv. 237 (1843).

Nitidus, subglaber, ferrugineus; thorace maribus dilatato; elytris crebre seriatim punctatis, nigris, basi ferrugineis. Long.  $1\frac{1}{2}$  lin., lat. 1 lin.

Habitat in Mexico.

Of the size and appearance of *C. ruptus*. Above slightly convex, ferruginous, shining.

Antennæ fuscous, with the base testaceous. Head glabrous, densely and deeply punctate, and slightly impressed on each side in front. Thorax dilated in the males, slightly rounded on the sides, the basal margin somewhat depressed on each side, sparingly punctate, glabrous, with the lateral margin ciliated. Scutellum rounded, glabrous, sparingly punctate at the base. Elytra a half longer than the thorax, subglabrous, rather closely and regularly punctate in rows, black from the apex to beyond the middle. Abdomen slightly pubescent, rather faintly punctate. The anterior tibiæ are distorted more at right angles than in *C. ruptus* (see Plate XXXIV. fig. 1 c\*).

Very nearly allied to *C. ruptus*, but may be distinguished by the almost entire absence of pubescence on the head, thorax, and elytra, by its darker colour and the more extended space of black on the elytra, and by its being rather less deeply punctate. The thorax continues nearly straight forward for some distance in front of the posterior angles before it rounds-in towards the anterior angles.

From Mexico. Erichson gives Carthagena, in Columbia, as a locality for this species, on the authority of Dejean; but an examination of Dejean's collection shows that, of the specimens standing in it under this name, those from Carthagena are *C. ruptus*, and those from Mexico are partly of this species and partly of the next, *C. scutellaris*.

### 3. COLASTUS SCUTELLARIS.

*C. postico* valde affinis, paulo elongatior, minus et levius punctatus; capite et thorace piceo-nigris; elytris nigris, basi circa scutellum anguste transversim rufo-castanea; scutello nigro-piceo vel piceo-castaneo; cæteris rufis. Long.  $1\frac{3}{4}$ –2 lin., lat. 1 lin.

Variat colore plus minusve saturato.

Habitat in Mexico.

Very nearly allied to *C. posticus*; but it is larger, more elongate, more glabrous and shining, and less deeply and less closely punctate; the thorax is rounded on the edges more gradually. In other respects the characters are nearly the same, with the exception of the colour, which on the head, thorax, and scutellum is black, piceous black, or dark chestnut, instead of bright red. The elytra too have the black portion much more extended, leaving usually only a small, narrow, short basal transverse line (sometimes only a small red spot) on each side of the scutellum. The colour varies also a good deal in the intensity of the black and red on the different parts of the body. The anterior tibiæ nearly as in *C. posticus* (see Plate XXXIV. fig. 1 c\*\*\*).

From Mexico.

### 4. COLASTUS ABDOMINALIS.

Erichs. in Germ. Zeitschr. iv. 241 (1843).

Subdepressus, piceus, abdomine pedibusque rufis. Long.  $1\frac{2}{3}$  lin.

Habitat in Brasilia.

Subdepressed, oblong, somewhat shining, sparingly fulvo-pubescent. Antennæ testaceous, the club ferruginous. Head deeply punctate, rufo-piceous. Thorax nigro-piceous, truncate at the base, much dilated in the males, gently rounded on the sides, punctate

sparingly on the disk and more deeply and closely on the sides, posterior angles rounded. Scutellum black, sparingly punctate. Elytra somewhat longer than the thorax, punctate-striate, nigro-piceous or black. Abdomen entirely red, above densely, below sparingly punctate. Prosternum piceous. Legs red, moderately distorted in the males.

There is considerable variation in the colour of this species; sometimes the characteristic red colour of the abdomen is absent, it being black or piceous, at others the thorax is reddish piceous, and occasionally the whole body is so.

From Brazil.

##### 5. COLASTUS BISIGNATUS.

Elongatus, subdepressus, glaber, nitidus, sat fortiter punctatus; niger, elytris singulis plaga basali magna quadrata rufa; capite lato; thorace subquadrato, maribus dilatato, lateribus medio sinuatis; elytris seriatim punctatis; pedibus piceis, tibiis tarsisque dilutioribus. Long.  $2\frac{1}{3}$  lin., lat. 1 lin.

Habitat in Venezuela.

Elongate, subdepressed, glabrous, shining, rather deeply punctate, black, with the exception of a large square red patch occupying the greater part of each elytron, leaving only a rather narrow black margin on every side, which is broadest at the apex and narrowest (sometimes almost absent) at the base. Head broad. Thorax subquadrate, dilated in the males, with an impression on each side, and the sides sinuate in the middle, the base bisinuate, all the angles rounded. The scutellum rounded, almost impunctate. Elytra about a half longer than the thorax, punctate in rows, obliquely truncate, the exterior angles rounded and convex. Abdomen faintly punctate. The legs piceous, the tibiæ and tarsi paler.

At first sight this species recalls to mind the brachelytrous insect *Tachinus subterraneus*, the appearance and colouring of which are very closely imitated—especially when the wings are protruded so as partially to conceal the different abdomen. The imitation, however, fails in the texture of this insect, which is coarser, harder, and less delicate.

Found in Venezuela.

##### 6. COLASTUS BIPLAGIATUS.

*Cercus biplagiatus* (Schönh.).

*Ips biplagiata* (Dej. Cat. 134, ed. 1837).

Elongatus, subparallelus, punctatus, nitidus, glaber, niger, elytris plaga rufa longitudinali prope scutellum notatis; thorace subquadrato, maribus haud dilatato; elytris leviter seriatim punctatis; subtus piceo-niger, antennis pedibusque piceis; maribus tibiis anticis leviter angulatim distortis. Long. 2 lin., lat.  $\frac{3}{4}$  lin.

Habitat in Columbia.

Elongate, subparallel, somewhat convex, punctate, glabrous, shining, black, with a longitudinal pale-red patch on the elytra near and parallel to the suture. Head broad, sparsely punctate. Thorax subquadrate, rather convex, rather thickly punctate, punctures round; anterior angles rounded; posterior angles nearly right-angled, with the point

rounded; the sides margined, and slightly hollowed at the middle just inside the margin; the base scarcely sinuate; apex broadly emarginate and slightly sinuate. Scutellum rounded, impunctate at the apex, slightly punctate at the base. Elytra subparallel, lightly punctate in rows; the suture depressed, giving the appearance of a stria alongside it; the pale-red patch reaches from the scutellum to fully a fourth of the length of the elytra from the apex. Abdominal segments lightly aciculary-punctate. Antennæ, body below, and legs piceous. The anterior tibiæ less acutely bent (in the males?) than in the other species of this section.

I have only seen two specimens; and the anterior tibiæ are distorted in both; hence I assume them to be males. The thorax was not dilated in these.

From Columbia.

There is a single specimen in the collection of Professor Boheman of Stockholm, and one in Dejean's collection in the possession of the Marquis de la Ferté. It stands there under the name of *Ips biplagiata*, with the synonym of *Cercus biplagiatus* of Schönherr, and is labelled as having been received by Dejean from Schönherr himself. I cannot find, however, that it has been published by Schönherr.

#### 7. COLASTUS NIGER. (Plate XXXIII. fig. 9.)

Elongatus, subparallelus, sat convexus, punctatus, nitidus, glaber, niger, antennis pedibusque nigro-piceis; thorace transverso, subquadrato; elytris crebre seriatim punctatis; maribus tibiis anticis dilatatis, subdistortis (Pl. XXXIII. fig. 9 c). Long. 2 lin., lat.  $\frac{2}{3}$  lin.

Habitat in Brasilia.

Nearly allied to *C. biplagiatus*.

Elongate, subparallel, somewhat convex, rather coarsely punctate, shining, glabrous, black, the antennæ and legs nigro-piceous. Head broad, declinate, sparsely punctate. Thorax nearly as in *C. biplagiatus*, but narrower, nearly quadrate, a very little narrower in front than behind, sides subparallel, slightly hollowed in the middle near the margin, apex not so deeply emarginate as in *C. biplagiatus* (not dilated in the only specimen I have seen, and which I suppose to be a male). Scutellum large, punctate at the base, smooth at the apex. Elytra a half longer than the thorax, subparallel, punctate in rows, interstices impunctate, each elytron somewhat longitudinally convex so that the suture is slightly depressed, apex of each truncate obliquely inwards and forwards, exterior apical angles rounded, sutural angles obtuse. Abdomen finely and aciculary punctate. Anterior tibiæ bent and dilated (in the males?), the outer margin obtusely angled, straight towards the apex, sinuate and curved on the inner side; tarsi much dilated.

This is the only species of this section (so far as yet known) which is entirely black. Both it and *C. biplagiatus* have a somewhat different facies from the other species, being more elongate and with the head broader and more declinate. The specimens being unique, I have not ventured to dissect out the ligula, but have no doubt it will be found to conform with those of the other species.

From Rio Janeiro. I have only seen a single specimen of this species. It is in the collection of Professor Boheman.

## (Subgenus COLASTUS proper.)

Caput modicum. Maribus thorax haud dilatatus et tibiæ anticæ haud distortæ.

The thorax is not dilated nor are the anterior tibiæ distorted in the males in this subgenus. It may be partitioned into several groups, thus:—

SECTION I. Broad and convex\*. Texture not soft nor shagreened. Type, *C. latus* (Pl. XXXIV. fig. 2).

II. Moderately broad and convex. Texture soft. Type, *C. pubescens*.

III. Moderately broad, much depressed, with the thorax as if a roller had passed over it. Type, *C. amputatus* (Pl. XXXIV. fig. 3) and *C. signaticollis* (woodcut, fig. 42).

IV. Elongate.

α. Texture not soft, dull, nor shagreened. Type, *C. decorus*.

β. Texture dull and shagreened. Type, *C. unicolor* (Pl. XXXIV. fig. 4).

γ. Texture soft, dull, not shagreened. Type, *C. infimus*.

SECTION I. Broad and convex. Texture not soft nor shagreened.

α. Colour of the body below red. Thorax red, or mostly red.

## 8. COLASTUS FERVIDUS.

Subnitidus, sparsim punctatus, totus læte rufus, pube fulva vestitus; elytris seriatim punctatis et pubescentibus. Long. 2 lin., lat.  $1\frac{1}{4}$  lin.

Habitat apud flumina Amazonum.

Entirely of a bright testaceous red colour, shining, clothed with a somewhat long fulvous pubescence. Head rather coarsely punctate. Thorax more sparingly punctate, short, broad, base strongly bisinuate; posterior angles acute, projecting backwards; anterior angles rounded; sides rounded. Scutellum large, slightly punctate. Elytra punctate and pubescent in rows. Abdominal segments more finely punctate.

From Villa Nova on the Amazons. There is a single specimen in the British Museum.

## 9. COLASTUS HEYDENI.

*C. fervido* valde affinis, forsan varietas ejus; nitidus, læte rufus, fulvo pubescens; capite, thorace antice lineis tribus longitudinalibus radiatim divergentibus et pygidio macula centrali nigro-piceis. Long. 2 lin., lat.  $1\frac{1}{4}$  lin.

Habitat in Brasilia.

Closely allied to *C. fervidus*; perhaps only a variety. It is of a bright testaceous red colour, but has the head, three longitudinal stripes like rays diverging backwards from the anterior part of the thorax, and a longitudinal patch on the middle of the pygidium pitchy black. The thorax is not quite so convex as in *C. fervidus*, but there is little other distinction between them.

From Rio Janeiro. Named in honour of Herr von Heyden, of Frankfort-on-Maine, the study of whose large collection has furnished me with much valuable information. I have seen only a single specimen, which is in the collection of Professor Boheman.

\* Of course the word 'convex' is used merely in a comparative sense. It is inapplicable in a literal sense in a genus few of whose members are more convex than a thread-paper.

## 10. COLASTUS BOHEMANI.

*C. fervido* affinis, sed minus convexus, elytris paullo brevioribus, lateribus eorum minus rotundatis: læte rufus; elytris nigris, plaga magna triangulari circa scutellum rufa. Long.  $1\frac{3}{4}$  lin., lat. 1 lin.

Habitat in Brasilia.

Var. *NIGRIPENNIS*. Supra leviter convexus, subnitidus, griseo pubescens, punctatus, læte rufus, scutello et elytris nigris; elytris seriatim punctatis et pubescentibus. Long. 2 lin., lat.  $1\frac{1}{8}$  lin.

Habitat in Ega apud flumina Amazonum.

Var. *CANDEZEI*. Major, convexior, læte rufus; elytris (basi excepta) nigris. Long.  $2\frac{1}{3}$  lin., lat.  $1\frac{1}{4}$  lin.

Habitat in Ega apud flumina Amazonum.

Var. *BASALIS*. Subnitidus, fortiter punctatus, pubescentia fulva dense vestitus, læte rufus, elytrorum apice irregulariter piceo; elytris seriatim punctatis. Long.  $2\frac{1}{3}$  lin., lat.  $1\frac{1}{4}$  lin.

Habitat apud flumina Amazonum.

Allied to *C. fervidus*, but rather less convex. Bright testaceous red, with the exterior margin of the elytra from the apex of the suture to the shoulders black. Antennæ fuscous, with the basal joint testaceous red. Thorax with the sides more densely punctate than the disk, the posterior angles projecting very slightly backwards. Elytra a little shorter and less rounded on the sides than in *C. fervidus*, lightly punctate in rows, with the shoulders and suture rather prominent, each elytron sloping obliquely outwards and backwards.

From Rio Janeiro. A unique specimen in the British Museum. Named as a well-deserved homage to Professor Boheman of Stockholm.

The variety *nigripennis* is somewhat convex and shining above, clothed with much griseous pubescence, punctate. Bright testaceous red, with the scutellum and elytra black. Head closely but not deeply punctate. Thorax sparingly punctured on the disk, more densely on the sides and posterior angles, which project slightly backwards. Scutellum black, large, rounded, punctate except along the apical margin. Each elytron separately somewhat convex, so that the suture is slightly depressed, coarsely punctate and pubescent in rows, apex of each obliquely rounded; there is a slight indication of piceous at the base, next each side of the scutellum. Abdomen slightly punctate.

A single specimen was found at Ega by Mr. Bates, and it is preserved in the collection of the British Museum.

The variety *Candezei* is coloured very much like *nigripennis*, but is larger, more convex, more shining, less pubescent, the pubescence more fulvous, and with the scutellum and a narrow margin at the base of the elytra bright testaceous red, as well as the rest of the body. Elytra black, except the narrow strip at the base, which is broadest next to the scutellum, its breadth there equalling the length of the scutellum, but gradually becoming narrower as it approaches the sides, before reaching which it disappears.

This variety differs from the typical form (*C. Bohemani*) in colour—the elytra being nearly wholly black in the one, and with only the exterior oblique apical half in the other. It is considerably broader, and has (perhaps in consequence) more rows of striæ on the elytra, viz. about twenty-one instead of about fifteen, it is more convex, and it has the sides of the thorax a little more rounded.

Found at Ega by Mr. Bates, and named after M. Candèze, of Liège, in token of admiration of his works on the larvæ of Coleoptera, and more especially of his recent monograph of the family of *Elateridæ*.

The variety *basalis* resembles the typical form in colour, but is rather broader, flatter, more deeply punctate, and more pubescent. Bright testaceous red, with the apical half of the elytra piceous, the anterior margin of the piceous band indeterminate and irregular. Antennæ rufous, with the club fuscous. Thorax with the posterior angles more projecting backwards. Scutellum thickly punctate. The elytra deeply punctate in rows, apex truncate, obliquely rounded, the pubescence fulvous on the black portion of the elytra as well as on the rufous part. Pygidium and abdominal segments less deeply and more finely punctate.

Brought by Mr. Bates from Ega, and described from a single specimen in the British Museum.

The above varieties may by some be considered distinct species. They hover on the borders between species and varieties, but they appear to me scarcely distinct.

#### 11. COLASTUS DORSALIS.

Subdepressus, punctatus, levissime pubescens, supra niger, dorso rufo (videlicet thoracis medio, scutello, elytrorum medio et abdominis medio supra), subtus rufus; pedibus testaceis; antennis testaceis, clava fusca; thorace angulis posticis rotundatis. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in Ega apud flumina Amazonum.

Subdepressed, punctate, most feebly pubescent; below testaceous red, above black, with a longitudinal oblong red patch reaching from nearly the anterior margin of the thorax to nearly the apical margin of the elytra and continued to the middle of the dorsal abdominal segments. Head moderately broad, closely but faintly punctate; mouth red; antennæ testaceous, with the club fuscous. Thorax short, transverse, gently rounded on the sides, narrowed in front, but not so much so as in many species; the base almost without sinuation, a little wider than the base of the elytra, posterior angles rounded; punctuation very light on the disk, deeper and more frequent towards the sides. Scutellum red, slightly punctate at the base. Elytra slightly convex, more particularly towards the apex, for the most part gently punctate-striate, although in parts the striation is interrupted and they are there only punctate in rows, faintest towards the suture; the black space at the apex of the elytra enclosing the red dorsal patch is a little broader than that at the apex of the thorax. Abdomen above more pubescent and punctate; the red patch encroaches slightly on the anterior portion of the pygidium, but occupies a broad space on the penultimate segment. Underside testaceous red. Legs testaceous.

From Ega on the Amazons. A single specimen in the British Museum.

β. Colour of the thorax and body black. Elytra black with a red patch.

## 12. COLASTUS VULNERATUS.

Erichs. in Germ. Zeitschr. iv. 240 (1843).

*Strongylus pauperculus*, Dej. Cat. 135 (1837).

*Colastus plagiatus*, Erichs. in Germ. Zeitschr. iv. 241 (1843).

*Colastus corticalis* (Mus. Berol.).

Leviter convexus, nitidus, longius pubescens, piceus vel niger; elytris leviter convexis, macula basali pedibusque testaceis. Long.  $1\frac{2}{3}$ –2 lin., lat. 1 lin.

Habitat in Brasilia.

Oval, slightly convex, slightly shining, piceous or black, clothed with a long fulvo-griseous pubescence. Head sparsely and deeply punctate; the mouth pale. Thorax bisinuate at the base, rounded on the sides, somewhat convex, deeply but not closely punctate. Scutellum thickly punctate. Elytra a half longer than the thorax, regularly punctate-striate, with the pubescence in rows, and marked by an oblong rufo-testaceous basal patch, interrupted at the suture and parallel to it, extending obliquely to the shoulder on the outer side. Abdomen more thickly punctate, the segments paler at the margins. Body below faintly punctate. Legs testaceous.

It is marked similarly to *C. bimaculatus* and *C. discoideus*, but is more convex, smaller, and with a fulvous pubescence.

I have examined with great care the typical specimens from which Erichson described this species and his *C. plagiatus*, as well as several specimens in other collections which had his authority for the accuracy of their names, but, notwithstanding, I have been unable to find any specific distinction. I have found the extent of the red basal patch on the elytra a little larger and more disposed as a basal fascia in *C. plagiatus* than in *C. vulneratus*; but Erichson does not give this as a distinguishing character: while, on the other hand, I have been unable to detect in his own specimens the characters on which he founded their distinction. He says that *C. plagiatus* is "uncommonly like the preceding (*C. vulneratus*), and is chiefly to be distinguished from it by the deeper punctuation of the somewhat shorter elytra, and the more sparing punctuation and at the same time shorter pubescence of the abdomen." If these differences exist, they are so small in degree that I think myself justified in disregarding them, and in considering both *C. plagiatus* and *C. vulneratus* to be the same species.

This species is sometimes wholly flavescent, doubtless from immaturity. There are several specimens in that state standing apart in the Berlin collection under the provisional name of "*C. corticalis*?" In Count Dejean's collection this species stands under the name of *Strongylus pauperculus*.

From Brazil. Not very rare.

## 13. COLASTUS BIMACULATUS.

Erichs. in Germ. Zeitschr. iv. 239 (1843).

Depressus, niger, subtiliter pubescens; elytris dense striato-punctatis, macula oblonga basali longitudinaliter posita rufa; pedibus piceis. Long. 2 lin., lat.  $1\frac{1}{4}$  lin.

Habitat in Columbia.

Broad, oval, depressed, black, somewhat shining, coarsely punctate, and sparingly clothed with a slight depressed cinereous pubescence. Antennæ rufo-piceous, with the club black. Head thickly punctate; the mouth piceous. Thorax short, with the base lightly sinuate on each side, and the sides rounded, punctured sparingly and deeply on the disk, more faintly and densely on the sides. Scutellum densely punctate in the middle at the base, smooth at the apex. Elytra about a half longer than the thorax, regularly punctate-striate, sometimes with an oblong red basal blotch (interrupted at the suture, and with the inner margin parallel to the suture, the outer margin extending obliquely outwards and backwards towards the base), at others without any mark. The blotch is as in *C. vetustus*, but does not reach back on the elytra more than the half of their length. Abdomen densely punctate. Body below faintly punctate. Legs piceous; the tarsi ferruginous.

This species differs from *C. vulneratus* in its larger size, less convexity, shorter and more sparing pubescence, lighter punctuation, and different colour of the legs. It differs from *C. discoideus* in its smaller size, finer punctuation, less pubescence, less depressed elytra, and in the different shape of the red patch on the elytra.

From Columbia.

#### 14. COLASTUS HILARIS.

Affinis *C. bimaculato*, sed magis convexus, fortius et parcius punctatus, elytris macula basali rubra majore. Long. 2 lin., lat. 1 lin.

Habitat in Cumana.

Allied to *C. bimaculatus*, but quite distinct; more convex, more sparingly and more deeply punctate; black, the elytra with rows of punctures, deeper and fewer in each row, and with a larger patch of red covering the base of both elytra. Head punctate and pubescent; the mouth and antennæ rufo-testaceous. Thorax convex, somewhat shining, sparingly clothed with long griseous pubescence, sparingly and deeply punctate, slightly more so towards the sides, which are sharply declinate and rounded; base a little wider than the elytra, very deeply bisinuate, the posterior angles projecting backwards, slightly piceo-ferruginous, as is the margin for a short distance forwards; there is a depression at the base on each side of the middle, so that the convex disk extends somewhat backwards towards the scutellum, like a large broad lobe. Scutellum large, rounded, punctate, apex smooth. Elytra somewhat convex, very little longer than the thorax, fulvo-pubescent and punctate in rows, the punctures oblong, not continuing to the apex, which is depressed, the red patch extending quite to the suture and reaching to within a fourth of the apex at the suture, then extending across the elytra in a gentle curve for about a half of their breadth, and then sloping obliquely backwards (*i. e.* backwards as regards the base of the elytra, but forwards as regards the head) to the exterior margin, which it reaches at about a third from the base; it then reverts again along the under side of the margin almost to the very apex; apex of each elytron very obliquely truncate forwards and inwards; sutural apical angles obtuse, exterior apical angles rounded. Abdomen more faintly punctate and grisco-pubescent; margins of segments smooth. Legs rufous.

From Cumana. The only specimen which I have seen is one in the collection of the Marquis de la Ferté, standing under the name which I have adopted.

## 15. COLASTUS DISCOIDEUS.

Erichs. in Germ. Zeitschr. iv. 239 (1843).

*Strongylus bipustulatus*, Dej. Cat.

Depressus, niger, subtiliter pubescens; elytris fortiter striato-punctatis, rubris, nigro cinctis; pedibus piceis. Long. 2 lin., lat.  $1\frac{1}{2}$  lin.

Habitat in Cayenne.

Scarcely longer than *C. bimaculatus*, and about a half broader, depressed, black, shining, sparingly and slightly griseo-pubescent. Antennæ black, with the two basal articles testaceous. Head densely and deeply punctate; labrum piceous. Thorax short, with the base sinuate on each side, the sides rounded, sparingly but strongly and deeply punctate on the disk, the posterior angles marked with an impression near the base. Scutellum strongly punctate. Elytra closely and strongly punctate-striate, with a large deep-red blotch occupying the base and the disk, its outer side running straight and parallel to the margin, which is narrowly black, its apical side forming a right angle with the outer margin and running parallel to the apex for a short distance, then rounding-in towards the suture and running up to the scutellum and parallel to it; the black apical margin is broader than the lateral edging. Abdomen densely punctate. Body below closely but faintly punctate. Tarsi ferruginous.

Like *C. bimaculatus*, but still broader and more coarsely punctate. It is less pubescent, rather more convex, and with a coarser and closer punctuation on the pygidium and the segments of the abdomen.

From Cayenne. Also collected by Mr. Bates on the Amazons.

## 16. COLASTUS VETUSTUS.

Similis *C. vulnerato* Er. statura et colore, sed major; differt in elytris haud striato-punctatis: leviter convexus, niger, pubescens, opacus; elytris planis, irregulariter leviter haud seriatim punctatis, plaga basali obliqua rufa; pedibus piceis. Long.  $1\frac{3}{4}$  lin., lat. 1 lin.

Habitat in Brasilia.

Similar in form and colour to *C. vulneratus*. Slightly convex, opaque, lightly punctate, and clothed with plentiful long fulvous pubescence. The head is faintly punctate, and has a round impression on each side in front. The thorax is short, transverse, much narrower in front than behind, rather convex above, and with the sides much rounded, the posterior angles projecting much backwards. Scutellum sparingly punctate. The elytra are not punctate-striate, but covered with an irregular fine punctuation; the patch of red is duller in colour than in *C. vulneratus*, and extends backwards parallel to the suture for about two-thirds of its length, separated from it by a space equal to the breadth of the scutellum, and extending outwards at the base beyond the shoulder. Abdomen thickly pubescent and faintly punctate. Antennæ fuscous. Legs fulvous.

Readily distinguished from any of the similarly marked species by the elytra not being punctate-striate but irregularly punctate.

From Brazil.

## 17. COLASTUS CONSOBRINUS.

Subdepressus, piccus, elytris diseo pieco-testaceis, fulvo pubeseens; capite crebre et leviter, thorace sparsim et fortiter punctatis; elytris leviter punetatis, vix striato-punctatis; pedibus pieco-ferrugineis. Long. 2 lin., lat.  $1\frac{1}{2}$  lin.

Habitat in Brasilia.

Broad, subdepressed, subopaque; thorax somewhat convex. Elytra flat, picco-testaceous on the disk, fulvo-pubescent; head darker. Antennæ pieceous, with the basal articles picco-testaceous, second article palest. Head thickly but not coarsely punctate. Thorax short, more than twice as broad as long, somewhat shining, coarsely and sparsely punctate, more densely towards the sides; sides gradually rounded towards the front, but less rapidly than in its allies, bisinuate at the base; posterior angles projecting behind. Scutellum longer than broad, rounded at the apex, finely and closely punctate; a narrow margin at the apex not punctate. Elytra about a half longer than the thorax; sides parallel, depressed, closely and finely punctate, the punctures with a slight tendency to run into rows; the disk of each elytron paler than the suture and margins, the pale portion not well defined, rather elongate and somewhat oblique, lying parallel to the sides of the scutellum. Abdominal segments finely punctate. Underside pieceous. Legs pieco-ferruginous.

Allied to *C. discoideus* and *C. vetustus*, but distinguished from the former by the punctuation on the elytra being close and scarcely striate, and from the latter (which also has the punctuation on the elytra without rows) by the greater breadth of the thorax, which is less rapidly narrowed in front; the pubescence also is shorter, and the punctuation on the elytra is more distinct, and with a slight tendency to rows, which the other has not. I am not wholly free from doubt, however, whether it may not turn out to be the female of *C. vetustus*.

From Rio Janeiro. Collected by the Rev. Hamlet Clark, who has liberally sacrificed his unique specimen to the British Museum.

## 18. COLASTUS DISPAR.

Oblongo-ovatus, subdepressus, subopacus, fortiter parve punctatus, niger, pubescentia longa grisea sparsim vestitus; thorace prope medium utrinque lineis irregularibus vel spatii parum elevatis impunctatis instructo; elytris seriatim punetatis et pubescentibus, *maribus* nigris, *fæminis* ferrugineis limbo apiceque nigris; subtus valde pubeseens; antennis pedibusque rufo-piceis. Long.  $2\frac{1}{3}$  lin., lat.  $1\frac{1}{8}$  lin.

Habitat in Mexico.

Rather elongate, oblong-ovate, somewhat depressed, somewhat opaque, black, coarsely but sparsely punctate, clothed with a long, scattered griseous pubescence, very thickly below. Thorax nearly twice as broad as long, subconvex, narrower in front than behind, emarginate in front, the sides somewhat parallel behind, rounded in front, base bisinuate, the posterior angles nearly right-angled; on the disk there is a longitudinal irregular dorsal line or space, narrowed at each end, more closely punctate than the rest, with a gently curved, smooth, impunctate, slightly raised space on each side, then another punc-

tate curved space, and then another impunctate, slightly raised, curved line, all irregular and semiobsolete. Scutellum sparsely punctate. Elytra with rows of rather coarse punctures and pubescence; in the males wholly black; in the females ferruginous, with the margins and apex black. Abdominal segments finely punctate, except at the margins, which are smooth. Antennæ and legs rufo-piceous.

Collected by M. Sallé at Toxpam, in Mexico, in the month of July. It is from his observation that I am enabled to indicate the sexes.

This species is scarcely broad enough to come into this section, it is not depressed enough for the next section, and it is scarcely narrow enough to fall into the third section. On the whole, it comes, on the strength of the ferruginous elytra in the female, better here, beside the somewhat convex species which have a red spot on the elytra, than anywhere else.

#### 19. COLASTUS MACULATUS.

Erichs. in Germ. Zeitschr. iv. 244 (1843).

*Strongylus signatipennis* (Dej. Cat. 135, ed. 1837).

*Nitidula 5-maculata* (Knoch, in litt.).

Piceus, pubescens; elytris dense fortiter punctatis, maculis rubris notatis. Long. 2 lin., lat.  $1\frac{1}{4}$  lin.

Var. Elytris rubris, maculis nonnullis fuscis.

Habitat in America septentrionali.

Oblong-oval, slightly convex, subopaque, clothed with griseous pubescence. Antennæ rufous, with the club fuscous. Head thickly and deeply punctate, piceous; mouth rufous. Thorax with the base slightly sinuate on each side, moderately rounded on the sides, closely and deeply punctate; piceous, with the lateral margin rufous. Scutellum thickly punctate, piceous. Elytra a half longer than the thorax, rather thickly and deeply punctate, the punctures scarcely in rows; piceous, with four red spots on each (fig. 32)—two next the suture, which are usually confluent (making one long patch narrowest in the middle), and two on the lateral margin, one of which is near the shoulder, and is sometimes united to the sutural spots (fig. 33), the other near the posterior angle; sometimes the whole elytra are rufous, with the base, the apex, and some minute spots towards the sides fuscous. Abdomen more deeply and less densely punctate, piceous; breast piceous. Legs rufous.

From North America.

γ. Above wholly black or nigro-piceous.

#### 20. COLASTUS RUFIPES.

Erichs. in Germ. Zeitschr. iv. 241 (1843).

Subdepressus, niger, subnitidus, parce fulvo pubescens; antennis pedibusque rufis; thorace disco parce, lateribus crebre, elytris striatim punctatis. Long. 2 lin.

Habitat in Columbia.

Fig. 32.

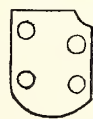


Fig. 33.



Fig. 34.



Broad, suboval, somewhat depressed, somewhat shining, sparingly clothed with a short fulvous pubescence, black. Antennæ rufous, with the club fuscous. Head thickly and deeply punctate, piecous, with the mouth rufous. Thorax not twice as broad as long, with the base subsinuate on each side, the sides rounded, the disk sparingly, the sides thickly and deeply punctate. Scutellum sparingly punctate, smooth at the apex. Elytra a half longer than the thorax, regularly punctate-striate. Abdomen above thickly punctate and with the last three segments wholly visible. Legs rufo-testaceous. The abdomen in the male has the pygidium above subacuminate at the apex and the last segment below deeply impressed with a longitudinal fovea.

This species is nearly allied to *C. macropterus*, but broader, has the pubescence more sparing and shorter, and the thorax not so short and more densely punctate on the sides; it is, moreover, distinguished from all the remaining species by the longitudinal fovea on the underside of the last segment. This may possibly, however, be only a sexual character, but it is one which enables it to be most easily identified. It is more elongate than the neighbouring species, and has the thorax more convex, more shining, and less punctate.

From Columbia and Brazil.

## 21. COLASTUS MORIO.

*Nitidula nigra* (Melsh. Cat.).

*Cercus niger*, Say, in Journ. Acad. Nat. Sc. Philad. iii. 195 (1823).

*C. morio*, Erichs. in Germ. Zeitschr. iv. 242 (1843).

Subdepressus, niger, griseo pubescens; antennis basi pedibusque rufis; thorace crebre punctato, basi profunde fovea eurvata utrinque impresso; elytris striatim punctatis; abdomine supra segmentis tribus expositis. Long.  $2\frac{1}{3}$  lin., lat.  $1\frac{1}{3}$  lin.

Habitat in Pennsylvania et Mexico.

Var. LUGENS. Minor, minus latus; thorace fovea eurvata basali minore, angulis posticis profunde foveatis; abdomine supra segmentis duobus fere solum expositis; pedibus piceis. Long. 2 lin., lat.  $1\frac{1}{4}$  lin.

Habitat in America meridionali.

Var. PERFORATUS. Crebrius punctatus, punctis minoribus; thorace fovea eurvata fere oblitterata; abdomine supra segmentis tribus expositis. Long. 2 lin., lat.  $1\frac{1}{4}$  lin.

Habitat apud Bahia.

Broad, short, ovate, subdepressed, black, somewhat shining, densely clothed with a fulvo-griseous pubescence. Antennæ rufous at the base, piecous at the apex. Head thickly punctate. Thorax very short, truncate at the base, much narrowed in front, a little rounded on the sides, thickly, strongly, and deeply punctate, with the base depressed and marked with a deep, closely punctate, eurved depression on each side, reaching into the posterior angles, which are nearly right-angled. Scutellum thickly punctate. Elytra a half longer than the thorax, rather strongly punctate in rows or sometimes in striæ. Abdomen above thickly punctate, pygidium more coarsely than the preceding segments;

Fig. 35.



[This cut gives the general effect, but the details of the outline are not to be depended on.]

the whole of the last three dorsal segments usually exposed. Legs rufous or piceo-rufous.

The most distinguishing characters of this species are its short thorax, very broad behind and rapidly narrowed in front, with a deep curved impression at the base on each side of the middle, extending into the posterior angles. Something like this occurs in the variety *lugens*, which is supposed to come from Brazil; but the abdomen of that variety has only the last two segments distinctly exposed, and the curved impression on the thorax is less marked and interrupted.

I should have preferred to retain the name by which this species was first described (*Cercus niger*, Say); but as Say's description is scarcely recognizable, and Erichson's name is thoroughly and universally established, I feel that I should be doing more harm than good to science by thus stretching too tightly the laws which regulate nomenclature.

From Pennsylvania and the southern parts of North America; extending into Mexico.

The variety *lugens* is smaller and not so broad, the thorax is comparatively narrower, the basal curved fovea on each side of the thorax is less marked—almost confined to a deep oblique fovea in the posterior angles, the abdomen has scarcely more than two segments exposed above, and the legs are darker; but, on the whole, I have not thought the differences sufficiently great to warrant me in recording it as a distinct species.

Believed to be from Brazil, but locality somewhat doubtful. Described from a single specimen, which I have placed in the British Museum.

The variety which I have called *perforatus* may perhaps be a distinct species; but, from its general character and the style of its punctuation, I am inclined to think that it is the climatal variety of *morio* peculiar to Bahia. Its chief difference is the absence, or nearly so, of the curved depression on each side of the base of the thorax. It is not wholly absent, however, and there is a slight trace of the fovea in the posterior angles. Its thorax is considerably more closely punctate, the punctures smaller and more distinct; the scutellum is very thickly and distinctly punctate, except at the very apex; and the elytra are also more distinctly punctate, the rows of punctures more numerous and more irregular, anastomosing a little in some places. I do not see any other very marked difference.

From Bahia. A single specimen was in Mr. Fry's collection, which he has sacrificed to complete the collection of the British Museum.

## 22. COLASTUS BREVICOLLIS.

Valde affinis *C. morioni*: subdepressus, niger vel piceo-niger, nitidus, griseo pubescens; thorace brevi, lateribus postea valde rotundatis; elytris striato-punctatis. Long. 2 lin., lat.  $1\frac{1}{3}$  lin.

Habitat apud flumina Amazonum.

Fig. 36.



Very nearly allied to *C. morio*. Its chief difference is that the thorax is shorter, and is wide behind for a greater space; the sides turn in rapidly near the posterior angles, which are somewhat obtuse, although, owing to the deep sinuation of the base, they are less so than might be expected from the rapid curve of the sides; there is no curved

fovea on each side of the base of the thorax; the punctuation is not so close; but in other respects it is almost the same as *C. morio*.

From Ega, on the Amazons. Collected by Mr. Bates.

23. *COLASTUS MACROPTERUS*.

Erichs. in Germ. Zeitschr. iv. 241 (1843).

*Nitidula macroptera*, Fab. Syst. El. i. 354. 35 (1801).

Subdepressus, niger vel nigro-piceus, nitidus, fulvo pubescens; thorace parce, elytris seriatim punctatis. Long. 2 lin., lat. 1 lin.

Habitat in Brasilia.

Oblong-oval, subdepressed, pitchy black, fulvo-pubescent. Antennæ testaceous, the club fuscous. Head thickly punctate, rufo-piceous, with the front blackish. Thorax short, scarcely wider than the elytra, more than twice as broad as long, with the base subsinuate on both sides, the sides gently rounded, sparingly but strongly punctate, fuseo-piceous, towards the sides gradually rufescent. Scutellum sparingly punctate, nigro-piceous. Elytra a half longer than the thorax, regularly punctate-striate, nigro-piceous, pubescent in rows, not much wider behind than in front. Abdomen above with the last three segments exposed; densely and strongly, below sparingly and faintly punctate, nigro-piceous, the margins of the penultimate segments rufescent. Breast nigro-piceous. Legs rufo-testaceous.

From Brazil, Amazons, Peru, and other parts of South America. In Mr. Fry's collection there is a small specimen from Mexico which scarcely differs except in size.

24. *COLASTUS LATUS*. (Plate XXXIV. fig. 2.)

Latus, subdepressus, sat nitidus, niger vel piceo-niger, elytris interdum piceo-rufis, parce et longe fulvo pubescens; antennis piceo-rufis, clava nigra; thorace disco parce fortiter, lateribus erebre, elytris seriatim punctatis; pedibus piceo-rufis. Long.  $2\frac{3}{4}$  lin., lat.  $1\frac{2}{3}$  lin.

Fig. 37.



Habitat in Mexico.

Broad, subdepressed, black or piceous, shining, sparingly clothed with a longish, flaccid griseous pubescence. Antennæ rufous, with the club black. Head thickly and strongly punctate. Thorax wider than the elytra, exactly twice as broad as long, rounded on the sides, with the disk sparingly and the sides thickly punctate, and with the base sinuate on each side, the middle somewhat raised and prominent. Scutellum coarsely and sparsely punctate, smooth at the apex. Elytra a half longer than the thorax, coarsely punctate in rows, wider behind than in front; sometimes they are piceous or rufo-testaceous with a darker margin all round. Abdomen finely and sparingly punctate above, and with only the last two segments and the margin or sides of the third visible. Legs rufo-piceous.

From Mexico.

I have seen this species standing in some collections as *C. rufipes*; but it is much broader than *rufipes*, and, besides various other differences, has not the longitudinal fovea on the last ventral segment. It is very closely allied to *C. macropterus*, but considerably larger and with longer pubescence.

## 25. COLASTUS TONSUS.

Valde affinis *C. lato*; differt pubescentia brevior et magis rufa atque punctis minoribus impressus. Long.  $2\frac{1}{2}$  lin., lat.  $1\frac{1}{2}$  lin.

Habitat in Brasilia.

This species is very similar to *C. latus*. The chief points of difference are, that it has only a short stiff rufous pubescence instead of the longer, flaccid griseous hairs of that species, and that the punctuation is smaller and rather more frequent.

From Rio Janeiro, where it was collected by Mr. Fry, who has presented his specimen to the British Museum.

## 26. COLASTUS THALESTRIS.

Valde affinis *C. lato*; minor, minus nitidus, elytris fere striato-punctatis, abdomine supra subrugose punctato, subtus rufo. Long. 2 lin., lat.  $1\frac{1}{4}$  lin.

Fig. 38.



Habitat apud flumina Amazonum.

Very nearly allied to *C. latus*, but smaller, of the size and appearance of *C. macropterus* (but with only two segments of the abdomen fully exposed above), less shining, the punctuation a little closer, and the rows of punctures on the elytra almost united into striæ; the underside is rufous or piceo-rufous. In other respects it is very much the same as *C. latus*.

Collected by Mr. Bates at St. Paul's and Ega, on the River Amazons.

SECTION II. Moderately broad and convex. Texture soft.

Colour of body and thorax rufo-piceous or piceous. Elytra wholly black.

## 27. COLASTUS PUBESCENS\*.

Statura *C. vulnerati*; valde pubescens, levissime subrugulose punctatus, rufus, textura molli; elytris nigris, substriatis; pedibus rufis. Long.  $1\frac{7}{8}$  lin., lat. 1 lin.

Habitat in Brasilia.

Oblong-ovate, somewhat convex, opaque, of a soft texture, very faintly subrugulose punctate, very thickly clothed with a griseous pubescence; rufous, with the disk of the thorax darker (almost piceous) and the elytra black. Thorax broad, short, transverse, narrowed and emarginate in front, with the base truncate, the posterior angles almost right-angled; the sides rounded. Scutellum rather large. Elytra short, very faintly substriate; apex of each elytron very obliquely truncate and rounded. Legs rufous.

The soft and dull texture of this species is like that of *Colastus infimus* or *Carpophilus melanopterus*, the latter of which it also resembles in colour.

From Brazil. In the collection of M. Deyrolle.

\* I think it right to mention that the notes from which this description is made were taken at an early period in my study of this family, and before I was so familiar with its characters as I have since become. I therefore have not the same confidence in its completeness as in that of most of the other species.

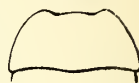
SECTION III. Moderately broad. Depressed, as if a roller had passed over the thorax.

α. Above wholly black or nigro-piceous.

28. COLASTUS SIMPLEX.

Oblongo-ovatus, depressus, niger, subnitidus, sparsim griseo pubescens, leviter, sparsim et sat fortiter punctatus; thorace basi bisinuato; elytris leviter seriatim punctatis; pygidio sat fortiter punctato; abdomine segmentis dorsalibus penultimis et antepenultimis levissime punctatis; antennis pedibusque piceis. Long. 2 lin., lat.  $1\frac{1}{8}$  lin.

Fig. 39.



Habitat in Brasilia.

Var. *SALLEI*. Parum latior, magis depressus, levius punctatus, thorace lateribus minus rotundato. Long. 2 lin., lat.  $\frac{1}{8}$  lin.

Habitat in Mexico.

Allied to *C. morio*, but narrower and more depressed. Oblong-ovate, depressed, black, sparingly clothed with griseous pubescence, sparsely punctate, the punctures not coarse nor deep. The thorax with a flat space in the middle; the base bisinuate, sides rounded, turned in rapidly near the posterior angles, which are obtuse, so that there is a marked break in the profile of the sides between the thorax and elytra; slightly emarginate in front, anterior angles obtuse. Scutellum rather closely punctate at its base, apex impunctate. Elytra black, nigro-piceous near the scutellum, punctate in rows not very close to each other, about eighteen on each elytron, the punctures in the alternate rows in some instances having a tendency to run together, so as to be punctate-striate; the punctures are oblong, instead of round as on the thorax; the pubescence is short, and runs along the rows. Pygidium broad, rather closely punctate, the other abdominal segments very faintly punctate. Legs and antennæ piceous.

This species is not without relations to *C. morio*, and is closely allied to *C. fulvipes* and to *C. ater*. From *C. morio* and its allies it may be distinguished, without close examination, by its narrower and more depressed form and by the flat middle of the thorax. The coarse punctuation of *C. fulvipes*, its parallel form, and parallel sides of the thorax prevent its being confounded with it; and from *C. ater* it may be distinguished by the different colour of the pubescence (which in *C. ater* is black) and by the different punctuation on the elytra, which in this species is oblong and in not very close rows, while in *C. ater* the punctures are closer, round, larger, and scarcely in rows, and, further, by the pygidium of *C. ater* being narrow, raised, and impunctate at the apex. Under the microscope the acicular chitinous texture of the elytra (like that easily seen in the different species of *Calathus*) is visible in this species, and scarcely, or not at all, in *C. ater*.

From Santarem.

The variety *Sallei* differs in being a little more depressed and somewhat broader, with the sides of the thorax less rounded, and in being somewhat less punctate, but in other respects is similar, and stands the microscopic test of its texture.

From Mexico.

## 29. COLASTUS ATER.

Oblongo-ovatus, depressus, nitidus, niger, pube longa parce vestitus, fortiter punctatus; thorace basi bisinuato; elytris subseriatim crebre punctatis; pygidio basi punctato, apice lævi et elevato; ore tarsisque piceis. Long. 2 lin., lat. 1 lin.

Fig. 40.



Habitat in Venezuela.

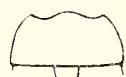
Closely allied to *C. simplex*. Oblong-ovate, depressed, twice as long as broad, shining, very black, and clothed with a long stiff pubescence, which is black above, except about the base of the elytra, and griseous below; rather deeply but not very closely punctate. Thorax transverse, with the sides rounded, the disk flat, emarginate in front, the anterior angles obtuse and slightly rounded; base a little wider than the base of the elytra, bisinuate, with a depression on each side of the disk; posterior angles scarcely pointed backwards, obtuse and rounded. Scutellum punctate at the base, smooth at the apex. Elytra narrower than the thorax at the base, obliquely truncate, and rounded at the apex; coarsely and thickly punctate in somewhat irregular rows; the punctures roundish, not oblong. Abdomen finely and rather closely punctate, except towards the apex of the pygidium, which is raised, narrow, and impunctate. Mouth, base of antennæ, and tarsi black, with a tendency to piceous or ferrugineo-piceous.

From Venezuela.

## 30. COLASTUS FULVIPES.

Oblongus, parallelus, valde depressus, fortiter et creberrime punctatus, fulvo pilosus, niger vel nigro-piceus; thorace brevi, emarginato, basi truncato, angulis posticis fere rectis, haud elytris latiore; elytris creberrime seriatim punctatis et fere punctato-striatis; antennis nigris, basi picea; pedibus fulvis. Long.  $1\frac{2}{3}$  lin., lat.  $\frac{5}{8}$  lin.

Fig. 41.



Var. Totus piceus.

Habitat in Brasilia.

Oblong, parallel, very much depressed, the thorax hollowed out in the middle; very closely and strongly punctate, black or nigro-piceous, clothed with stiff fulvous hairs. Head thickly punctate; mouth piceous. Thorax deeply emarginate in front, anterior angles declinate, projecting and obtusely rounded, subquadrate, base truncate, posterior angles nearly right-angled, most coarsely punctate in the middle, the punctures becoming finer, closer, and less marked towards the sides and angles; sides rounded in front, very slightly behind, so that the profile of the thorax and elytra is nearly continuous. Scutellum coarsely punctate, except at the apical margin. Elytra very closely punctate in rows, the rows (nearly twenty in number) very close to each other, and the punctures in the rows sometimes becoming confluent so as to make them punctate-striate, depressed towards the suture; the apex of each elytron truncated obliquely from the suture, and the external apical angles broadly rounded. Abdominal segments finely punctate, nigro-piceous. Legs fulvous.

From Brazil (Rio Janeiro, &c.). Not rare.

## 31. COLASTUS POCULARIUS.

Oblongus, valde depressus, piceo-niger, subnitidus, glaber, leviter punctatus; thorace disco impunctato longitudinaliter excavato; elytris striato-punctatis; antennis pedibusque fulvis. Long. 2 lin., lat.  $\frac{7}{8}$  lin.

Habitat in Brasilia.

Oblong, excessively depressed, nigro-piceous, somewhat shining, glabrous; lightly punctate, the elytra more strongly punctate-striate. Head depressed, lightly and sparingly punctate, with a curved impression in front. Thorax transverse, subquadrate, the sides gently declined, subparallel, narrowed and rounded in front, lightly and sparingly punctate, the disk impunctate and hollowed out longitudinally, the posterior angles almost right angles, the anterior declined and obtuse, with the base lightly sinuate on each side. Scutellum large, very faintly punctate towards the base, the remainder smooth. Elytra subquadrate, flat, punctate-striate, with the apex somewhat oblique and rounded, truncate. Pygidium and other abdominal segments lightly punctate. Antennæ and legs fulvous.

One of the very flat, scale-like species, not much thicker than a piece of paper. The large, cup-like, impunctate hollow in the middle of the thorax (which suggested its name) readily distinguishes the species.

From Rio Janeiro. I have seen only one specimen, which is in the collection of Professor Boheman of Stockholm.

$\beta$ . Black, with rufous marking on thorax and abdomen.

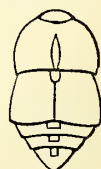
## 32. COLASTUS SIGNATICOLLIS.

Depressus, oblongo-ovatus, subnitidus, punctatus, pube brevissima fulva vestitus, piceo-niger; capite, vertice, thorace linea dorsali longitudinali basin versus, pectore et abdomine medio et supra et subtus ferrugineo-rufis; thorace lato; elytris seriatim punctatis; pedibus ferrugineo-rufis. Long.  $2\frac{1}{2}$  lin., lat.  $1\frac{2}{5}$  lin.

Habitat in Provincia Sanctæ Catharinæ in America meridionali.

Oblong-ovate, depressed, shining, punctate, clothed with a very short fulvous pubescence, black or nigro-piceous. Head broad, strongly but not thickly punctured, most so towards the sides; the vertex with a bright rufous spot. Antennæ rufous, club piceous or ferruginous. Thorax black, with a rufous longitudinal streak immediately before the scutellum, transverse, narrowed in front, much declined towards the anterior angles, flat and somewhat sparsely punctured on the disk, thickly on the sides, which are lightly rounded, all the angles obtusely rounded, broader than the elytra at the base, the base truncate and scarcely sinuate. Scutellum rather thickly punctate, except at the apex. Elytra flat, punctate in close rows, which in some instances are a little irregular, the sides inflexed; apex of each elytron little rounded, nearly straight, except at the exterior angles. Abdominal segments punctate above, each with a rufous patch in the middle before the posterior margin of the segment. The whole of the underside rufo-ferruginous, except the sides, which are darker. Legs rufo-ferruginous.

Fig. 42.



From the southern provinces of Brazil. In the collection of the Copenhagen Museum and in that of M. Deyrolle.

γ. Black, with disk of elytra rufous.

### 33. COLASTUS SEMITECTUS.

Erichs. in Germ. Zeitschr. iv. 243 (1843). Lacord. Hist. des Ins. Coléopt. pl. 18. fig. 1 (1854).

*Nitidula semitecta*, Say, in Journ. Acad. Nat. Sci. Philad. v. 182. 8 (1825).

Depressus, piceus vel niger, subglaber; elytris subseriatim punctatis, rufis, lateribus apiceque piceo marginatis. Long.  $1\frac{1}{2}$  lin., lat. 1 lin.

Habitat in Pennsylvania et partibus meridionalibus Americæ borealis.

Oblong, depressed, piceous, shining, almost glabrous. Antennæ rufous, with the club fuscous. The mouth rufo-piceous. Head flat, sparingly punctate. Thorax with the base lightly sinuate on each side, rounded on the sides, flat on the disk, thickly and strongly punctate, with the posterior angles rounded, rufescent, and wider than the elytra. Scutellum thickly punctate at the base, smooth at the apex. Elytra somewhat longer than the thorax, rather thickly punctate, in rows towards the suture, irregularly towards the sides, testaceous red, with the sides and the apex margined with black or piceous. Abdomen closely and faintly punctate. Legs red.

I have received a variety of this species from Count Motschulsky, under the name of *C. transparens*, in which the elytra are black, with a faint reddish hue showing itself almost imperceptibly on the disk. Erichson mentions that in Hoffmannsegg's collection this species stood under the name of *Nitidula brachyptera*, Knoch.

From Pennsylvania and the southern districts of North America.

δ. Body and thorax more or less reddish or testaceous.

### 34. COLASTUS AMPUTATUS. (Plate XXXIV. fig. 3.)

Erichs. in Germ. Zeitschr. iv. 243 (1843).

Depressus, glaber, punctatus, rufo-testaceus; elytris seriatim punctatis, plus minusve piceo limbatis. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{3}{4}$  lin.

Habitat in Brasilia et Columbia.

Flat, depressed, oblong, subparallel, glabrous, shining, rufo-testaceous. Antennæ testaceous, with the club sometimes dusky and rather elongate. Head moderately punctate. Thorax finely and rather sparsely punctate, shorter than broad, transverse, and somewhat quadrate; base truncate, with a very slight bisinuation on each side; disk flat, in some specimens hollowed; sides rounded rapidly in front. Scutellum somewhat triangular, with the apex rounded, faintly punctate at the base, impunctate at the apex. Elytra as long as the head and thorax taken together, rather finely punctate, the punctures arranged in rows, which are pretty close to each other; semitransparent, the marks of the folding of the wings beneath being occasionally seen through them, the exterior margin and apex in some specimens dusky or blackish; when this is the case, the coloration is darkest towards the apex. Segments of abdomen finely punctate, the punctures longitudinal. Legs testaceous or ferruginous.

From Brazil and Venezuela. Common.

## 35. COLASTUS CIRCUMSCRIPTUS.

Erichs. in Germ. Zeitschr. iv. 238 (1843).

*C. lunatus* (Motsch.).

Depressus, testaceus, pilosellus; elytris seriatim punctatis, nigro cinctis. Long.  $2\frac{1}{3}$  lin., lat. 1 lin.

Habitat in Brasilia.

Much depressed, testaceous, shining, sparingly pubescent. Antennæ testaceous, club fuscous. Head somewhat pilose, sparingly punctate, with an anterior spot and the vertical margin black. Thorax broad, truncate at the base, lightly rounded on the sides, flat, sparingly punctate and slightly pilose, with the middle of the apical margin black. Scutellum sparingly punctate. Elytra somewhat longer than the thorax, flat, closely and regularly punctate-striate, with pubescence in rows, the lateral and apical margins black, the suture piceous. Abdomen sparingly punctate, slightly pilose, with the apex black. Body below and legs testaceous.

Like a large pale *C. amputatus* with some long fulvous pubescence; but it is variable in size, being sometimes no larger than *C. amputatus*. The pubescence is the readiest character by which to distinguish it.

Found in South America from Central America to Brazil.

## 36. COLASTUS VARIUS.

Erichs. Cons. Ins. Coleopt. Peruan., in Wieg. Arch. xiii. 1. 92 (1847).

Planus, leviter punctatus, subopacus, pilosellus, testaceus, frontis maculis tribus verticeque, thoracis macula utrinque laterali, margineque basali, pygidii margine apiceque, scutello elytrisque nigris, his striato-punctatis, macula basali testacea. Long. 2 lin.

Habitat in Peruvia.

Flat, depressed, somewhat pilose, subopaque, faintly punctate, testaceous. Head with the vertex and three spots in front black. Thorax with the base narrowly black and a small rounded black patch on each side before the middle. Scutellum black. Elytra punctate-striate, black, except the scutellar region. Abdomen with the apex and margins of the pygidium blackish.

Somewhat of the depressed form of *C. amputatus*, but larger, and readily recognized by the peculiar distribution of colour.

From Peru.

## 37. COLASTUS MELANOCEPHALUS.

Erichs. in Germ. Zeitschr. iv. 238 (1843).

*Strongylus maculicollis* (Dej. Cat. 135, ed. 1837).

Depressus, testaceus, fulvo villosulus; capite, thoracis disco anteriore elytrorumque margine exteriori nigris. Long.  $3\frac{1}{4}$  lin., lat.  $1\frac{2}{5}$  lin.

Habitat in Cayenne.

Oblong, depressed, testaceous, somewhat shining, with long pilose pubescence. An-

Fig. 43.



Fig. 44.



tennæ black, with the last article testaceous. The head thickly and strongly punctate, black, shining, sparingly fulvo-pilose. Thorax truncate at the base, with the sides gently rounded, thickly and strongly punctate, with a longitudinal slightly raised smooth line in the middle, fulvo-pilose, with a large black patch occupying the disk and anterior margin both above and below. Scutellum thickly punctate. Elytra somewhat longer than the thorax, punctate in rows, densely clothed with a longish suberect pubescence, with the exterior margin towards the apex narrowly coloured piceous or black. Abdomen lightly punctate, fulvo-villose. Metasternum with a triangular black patch, sparsely punctate.

A fine, large, and distinct species—the largest of the genus.

From Cayenne. There is one specimen in the Berlin collection, and a pair in Dejean's collection in the possession of the Marquis de la Ferté, where they stand under the name of *Strongylus maculicollis*, Buq.

#### SECTION IV. Elongate.

α. Texture shining, and not soft, dull, nor shagreened nor very pubescent.

##### 38. COLASTUS ADUSTUS.

Erichs. in Germ. Zeitschr. iv. 242–3 (1843).

*Ips melanura* (Dej. Cat. 134, ed. 1837).

Leviter convexus, rufus, subglaber; elytris seriatis punctatis substriatisque, lateribus et apice fuscescentibus. Long. 2 lin., lat.  $\frac{2}{3}$  lin.

Habitat in Brasilia.

Oblong, slightly convex, shining, almost glabrous. Antennæ rather short, testaceous, club fuscescent. Head thickly and strongly punctate, rufous, with a piceous spot in the middle. Thorax subquadrate, truncate at the base, rather narrowed in front, with the sides nearly parallel and scarcely rounded, the posterior angles somewhat obtuse, transverse, slightly convex, sparsely and strongly punctate, rufous, with the disk becoming piceous in the middle, not broader than the elytra. Scutellum sparingly punctate, piceous, with the base punctate and the apex smooth and shining. Elytra almost a half longer than the thorax, most obsoletely striate towards the suture, strongly punctate in rows, rufous, the lateral and apical margins becoming piceous. Abdomen rufo-piceous, sparingly and faintly punctate and pubescent. Body below and legs rufo-testaceous.

From Brazil.

##### 39. COLASTUS DECORUS.

Leviter convexus, punctatus, subnitidus, rufus; elytris seriatis punctatis, nigris, macula circa scutellum rufa; scutello nigro; thoracis et abdominis disco supra longitudinaliter fuscescente. Long. 2 lin., lat.  $\frac{5}{6}$  lin.

Habitat in Brasilia.

Closely allied to *C. adustus*, Erichs., but more coarsely and more closely punctate, and consequently not so smooth and shining; the colour darkest on the disk, and not on the

sides as in *C. adustus*. Oblong, somewhat convex, shining, almost glabrous, rufous. Head coarsely punctate, with the middle a little darker. Thorax more sparsely punctate, a little narrower in front, with the apex emarginate and the sides subparallel,—very little rounded, scarcely broader than the elytra, and all the angles obtuse and slightly rounded. Scutellum rounded at the apex, dark chestnut, closely punctate at the base, smooth at the apex, and with a longitudinal fuscous marking on the disk. Elytra black or nigro-piceous, except a narrow oblique rufous patch parallel to the sides of the scutellum, the suture black; coarsely punctate, the punctures running into rows, which towards the suture become almost punctate striæ; hollowed along the suture, wider behind than in front, the apex of each elytron obliquely rounded, sutural angles obtuse, exterior apical angles rounded. Abdomen above longitudinally marked with a fuscous indeterminate patch, thickly and more finely punctate than the rest of the surface, finely fulvo-pubescent.

From Brazil.

#### 40. COLASTUS FERRUGINEUS.

Depressus, planus, oblongus, nitidus, testaceo-ferrugineus, leviter pilosellus; capite et thorace fortiter punctatis, elytris seriatim punctatis. Long. 2 lin., lat.  $\frac{3}{4}$  lin.

Habitat in Brasilia.

Flat, depressed, oblong, more than twice as long as broad, shining, testaceo-ferruginous, sparingly pubescent, hairs reddish. Antennæ of the same colour, with the club fuscous. Head coarsely punctured. Thorax short, nearly twice as broad as long, truncate at the base, emarginate in front; sides rounded from behind to the front, which is a good deal narrower than the base; coarsely punctured. Scutellum punctured across the base, smooth at the apex. Elytra longer than the thorax, but not quite so long as the head and thorax taken together, inclined towards the suture, becoming insensibly darker towards the apex, rather deeply punctate, the punctures arranged in rows, the punctuation not so coarse as that on the thorax; the pubescence arranged in rows. Underside and legs testaceo-ferruginous. The last two segments of the abdomen moderately punctate, the preceding segment very finely punctate, the remainder not punctate.

From Brazil.

#### 41. COLASTUS STRIATICOLLIS.

*C. infimo paulo minor*: planus, depressus, nitidus, testaceus; capite punctato; thorace transverso, quadrangulati, disco planato striis quatuor punctatis longitudinalibus, lateribus irregulariter punctatis; scutello punctato; elytris striato-punctatis, interstitiis haud punctatis. Long.  $\frac{7}{8}$  lin., lat.  $\frac{1}{3}$  lin.

Fig. 45.



Habitat in Brasilia.

About the size of *C. infimus*, but not allied to it. It is so shining and so nearly glabrous, that the pubescence can only be seen by a powerful glass. It is flat, depressed, and testaceous; the legs and underside somewhat paler. Head punctate. Thorax transverse, quadrangular, all the angles nearly right angles; the sides very little rounded,

somewhat inflexed towards the anterior angles; the disk flat, with four rows of punctures in the middle, reaching neither to the front nor the base; the interstices impunctate, but the spaces on each side irregularly punctate. Scutellum triangular, punctate, except a narrow shining margin. Elytra about a half longer than the thorax, punctate-striate; the interstices not punctate; the apex of each elytron truncate and slightly rounded, the margin not much inflexed nor much rounded. Pygidium very slightly punctate.

From Brazil. In the collection of Professor Boheman.

$\beta$ . Texture dull and shagreened.

42. COLASTUS UNICOLOR (OBSCURUS, Erichs.).

*Carpophilus unicolor*, Say, in Journ. Acad. Philad. v. 183 (1825).

*Colastus obscurus*, Erichs. in Germ. Zeitschr. iv. 244 (1843).

Oblongus, depressus, niger, pubescens; pedibus rufis; elytris dense ruguloso-punctatis, macula humerali obsoleta rufescente. Long.  $2\frac{1}{4}$  lin., lat.  $\frac{4}{5}$  lin.

Habitat in Carolina meridionali in America boreali.

Oblong, depressed, black, subopaque, fulvo-pubescent. Antennæ rufous, club piceous. Head punctate-rugose, in front foveolated on each side, wholly rufo-piceous, or sometimes with the front blackish. Thorax truncate and bisinuate at the base, somewhat rounded on the sides, closely punctate, with the lateral margin slightly translucent, all the angles obtuse, the posterior angles projecting backwards. Scutellum closely punctate. Elytra closely punctate, subrugulose, with an obsolete humeral spot and the apical margin piceous. Abdomen densely punctate, the segments margined with piceous. Legs rufous.

This has the close, fine punctuation common among the *Carpophili*, as well as a good deal of their general appearance, which no doubt misled Say into describing it as a species of that genus.

From the Southern States of North America.

$\gamma$ . Texture soft, not shagreened.

43. COLASTUS INFIMUS.

Erichs. in Germ. Zeitschr. iv. 245 (1843).

*Nitidula truncata*, Randall, in Boston Journ. ii. 18 (1838).

(*Colastus truncatus*, Leconte, in Col. Lake Superior, 222 (1850).)

Ovatus, subdepressus, leviter punctatus, griseo pubescens, niger; capite thoraceque piceo-testaceis; elytris subtiliter punctatis, testaceis, limbo laterali postice latiore apicalique nigris; pedibus testaceis. Long.  $1-1\frac{1}{4}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in America boreali.

Shortly ovate, depressed, subopaque, griseo-pubescent, black. Antennæ rufous, with the club fuscous. Head faintly punctulate, piceous, with the mouth rufous. Thorax a little narrower in front than behind, the sides rounded, finely punctate, rufous, with the disk generally piceous, anterior angles declinate, all the angles rounded, the base subsinuate on each side, and narrower than the base of the elytra. Scutellum faintly

punctulate, black. Elytra wider and a half longer than the thorax, finely punctate, black, with a large triangular luteous patch, common to both, extending from the shoulders to the interior angle of the apex. Abdomen very faintly punctate, piceous. Breast black. Legs testaceous.

From specimens sent to me by Dr. Leconte, under the name *C. truncatus* of Randall, I am enabled to identify the species described by that entomologist under that name with this species; but I do not think his description sufficiently clear to warrant me in substituting his name for the better-known one of Erichson. I have placed in the British Museum one of Erichson's types which I received from the Berlin Museum through the kindness of Professors Peters and Gerstäcker.

Common throughout North America from Lake Superior to Mexico.

#### 44. COLASTUS TRIANGULARIS.

Valde affinis *C. infimus*; differt thorace antice angustiore. Long.  $1-1\frac{1}{4}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in Brasilia.

Very closely allied to *C. infimus*—perhaps only a variety. The chief difference is that the sides of the thorax slope more rapidly towards the front. In other respects I can see little difference. Like *C. infimus* it varies in colour, having sometimes the lighter portions testaceous and at other times pale piceous, the arrangement of the colours, however, continuing the same.

From Brazil.

#### 45. COLASTUS LIMBATUS.

Leconte, in Proc. Acad. Nat. Sci. Philad. March 1858, 62 (1858).

Depressus, ovalis, niger, griseo pubescens; thorace confertissime subtilius punctato, antrosum angustato, margine angusto angulisque posticis indeterminate testaceis; elytris confertim subtilius punctatis, piceo-testaceis, limbo omni æquali suturaque nigris; abdomine subtilissime punctulato; pedibus antennisque testaceis, his elava paulo infuscata. Long. 1 lin., lat.  $\frac{3}{5}$  lin.

Habitat apud flumen Colorado prope flumen Gilæ in California.

Depressed, oval, blackish, griseo-pubescent. Head finely punctulate. Antennæ testaceous, the club fuscous. Thorax finely and very thickly punctate, narrowest in front, with the margins and posterior angles narrowly and indeterminately testaceous. Scutellum large, very finely punctate, the margin depressed. Elytra very thickly and finely punctate, piceo-testaceous, with the margin all round, base, sides, apex, and suture gradually blackish, the suture less distinctly so than the rest; the apex of each elytron slightly obliquely truncate. Abdomen very finely punctulate. Legs testaceous.

Through the kindness of Dr. Leconte I have seen this species, and agree with him in thinking it distinct from, although it is nearly allied to, *C. infimus*. It is of the same size and texture; but the thorax is more narrowed in front, the colour is muddy piceous black, and the elytra have the disk instead of the scutellar region paler.

From the River Colorado, near the Gila, in California.

## 46. COLASTUS OBLIQUUS.

Leconte, in Proc. Acad. Nat. Sci. Philad. March 1858, 62 (1858).

Depressus, ovalis, niger, griseo pubescens; thorace subtilius punctato, antrosum angustato, margine angusto testaceo postice latiore; elytris subtilius punctatis, obscure rufo-testaceis, limbo laterali postice latiore apicalique nigris, sutura paulo infuscata; antennis nigris; pedibus obscure rufis. Long. 1 lin., lat.  $\frac{3}{5}$  lin.

Habitat apud flumen Colorado in California.

Variat (immaturus) piceo-testaceus, elytrorum disco ab humeris ad suturæ apicem pallidior, versus scutellum infuscato.

Depressed, oval, black, griseo-pubescent. Antennæ black. Thorax very faintly punctate, narrowed in front, the margins narrowly testaceous, more widely so behind. Elytra very faintly punctate, obscurely rufo-testaceous, with the lateral and apical margins black, the black part widest behind, the suture slightly fuscous. Legs obscurely rufous.

I have not seen any specimen of the species described by Dr. Leconte under this name; but, from his description, there seems to be little specific difference between it and his *C. limbatus*. He himself says it is of the same size and form, but differs from it by the less dense punctuation of the thorax, and by the lateral black margin of the elytra being gradually broader from the humerus, and by the base not being margined with black. This coloration would carry it to *C. infimus*, to which, on other grounds, it is nearly allied, and would form the transition between it and *C. limbatus*; but the thorax narrowed in front being specially mentioned as a character, and the extent of its narrowing being the chief distinction between *C. limbatus* and *C. infimus*, I think it most probably a variety of *C. limbatus*. As, however, Dr. Leconte is not in the custom of making species upon slight or insufficient grounds, I have preserved the species and given the whole of his description, so that the reader may judge for himself.

From the River Colorado, in California.

## 47. COLASTUS TANTILLUS.

(Leconte, in Agassiz's Lake Superior, 222 (1850).)

Dr. Leconte has recorded (in the appendix to Agassiz's 'Lake Superior') a species under this name as having been found on the shores of that lake, but has given no description of it there, nor am I aware of his having described it anywhere else. I have not seen it, so that I can do no more than notice its existence.

The following dichotomous Table may be of service as a rough guide to the determination of the species of this difficult genus:—

1	{	More or less shining, with the thorax distinctly punctate . . . . .	1
		More or less dull. Texture soft or shagreened . . . . .	39
		Base of thorax nearly straight and its posterior angles rounded or right-angled. Anterior tibiæ distorted in the males . . . . .	2 (Subg. <i>Cyllopodes</i> .)
		Base of thorax bisinuate and its posterior angles pointing more or less backwards. Anterior tibiæ not distorted in males . . . . .	7 (Subg. <i>Colastus</i> proper.)

2	{ Thorax red . . . . .	3
	{ Thorax black or piceous . . . . .	4
3	{ Elytra with rows of pubescence . . . . .	<i>ruptus</i> .
	{ Elytra without rows of pubescence . . . . .	<i>posticus</i> .
4	{ Elytra black . . . . .	<i>niger</i> .
	{ Elytra marked more or less with red . . . . .	5
5	{ Elytra with the red disposed along the base . . . . .	<i>scutellaris</i> .
	{ Elytra with the red disposed as a patch surrounded by black . . . . .	6
6	{ Red patch occupying nearly the whole of the disk . . . . .	<i>bisignatus</i> .
	{ Red patch an elongate space near and parallel to the suture . . . . .	<i>biplagiatus</i> .
7	{ More or less broad . . . . .	8
	{ Elongate . . . . .	35
8	{ Comparatively convex . . . . .	9
	{ Depressed and flat, as if a roller had passed over the thorax . . . . .	26
9	{ Body below red . . . . .	10
	{ Body below black or piceous . . . . .	13
10	{ Thorax wholly red . . . . .	11
	{ Thorax partly red . . . . .	12
11	{ Elytra wholly red . . . . .	<i>fervidus</i> .
	{ Elytra more or less black . . . . .	<i>Bohemani</i> .
<i>Bohemani</i>	{ Scutellum and scutellar region of elytra red . . . . .	Var. <i>Bohemani</i> (type).
	{ Only the apical half of elytra black . . . . .	Var. <i>basalis</i> .
	{ Whole of elytra black, except a narrow basal strip. Scutellum red. . . . .	Var. <i>Candezei</i> .
	{ Whole of elytra and scutellum black . . . . .	Var. <i>nigripennis</i> .
12	{ Thorax red, with three black or piceous lines in front . . . . .	<i>Heydeni</i> .
	{ Thorax black, middle red . . . . .	<i>dorsalis</i> .
13	{ Thorax black. Elytra black, with one or more red or pale spots . . . . .	14
	{ Thorax and elytra wholly black or piceous . . . . .	20
14	{ Elytra with one red patch . . . . .	15
	{ Elytra with more than one red spot . . . . .	<i>maculatus</i> .
15	{ Elytra punctate in rows . . . . .	16
	{ Elytra irregularly punctate all over . . . . .	19
16	{ Outer margin of red patch parallel to the sides of the elytra . . . . .	<i>discoideus</i> .
	{ Outer margin of red patch passing obliquely from base or side inwards . . . . .	17
17	{ Red patch on elytra reaching to the suture . . . . .	<i>hilaris</i> .
	{ Red patch on elytra interrupted by a black space from the suture . . . . .	18
18	{ Legs rufous . . . . .	<i>vulneratus</i> .
	{ Legs piceous . . . . .	<i>bimaculatus</i> .
19	{ Punctures on elytra with a slight tendency to striation. Abdomen above piceous, with the middle darker . . . . .	<i>consobrinus</i> .
	{ Punctures on elytra wholly irregular. Abdomen black. . . . .	<i>vetustus</i> .
20	{ Apex of abdomen with a deep emargination and fovea below . . . . .	<i>rufipes</i> .
	{ Apex of abdomen without a deep emargination and fovea below . . . . .	21
21	{ Thorax without a curved basal fovea . . . . .	22
	{ Thorax with a curved basal fovea on each side . . . . .	<i>morio</i> .
<i>morio</i>	{ Curved basal fovea deep and uninterrupted . . . . .	<i>morio</i> (type).
	{ Curved basal fovea interrupted and with a separate deep fovea in the posterior angles . . . . .	Var. <i>lugens</i> .
	{ Curved basal fovea almost obliterated . . . . .	Var. <i>perforatus</i> .

- 22 { Elytra rather flat . . . . . *brevicollis*.  
 { Elytra somewhat convex or sloping outwards . . . . . 23
- 23 { Three dorsal segments of abdomen exposed . . . . . 24  
 { Little more than two dorsal segments of abdomen exposed . . . . . *Thalestris*.
- 24 { Thorax scarcely wider than the elytra, and elytra not much wider behind  
 { than in front . . . . . *macropterus*.  
 { Thorax wider than the elytra, and elytra wider behind than in front . . . . . 25
- 25 { Pubescence griseous, sparing, but long, flaccid, and woolly . . . . . *latus*.  
 { Pubescence rufous, stiff, and short . . . . . *tonsus*.
- 26 { Above wholly black or nigro-piceous . . . . . 27  
 { Above not wholly black . . . . . 30
- 27 { Glabrous . . . . . *pocularius*.  
 { More or less clothed with hairs or pubescence . . . . . 28
- 28 { Pygidium smooth, narrow, and impunctate at the apex . . . . . *ater*.  
 { Pygidium broadish and punctate . . . . . 29
- 29 { Sides of thorax turned in at the base, so that the profile of the thorax and  
 { elytra is not continuous . . . . . *simplex*.  
 { Sides of thorax almost, but not quite, continuous with the elytra . . . . . *fulvipes*.
- 30 { Ground-colour black with red or rufous markings . . . . . 31  
 { Ground-colour reddish or testaceous . . . . . 32
- 31 { Black, with rufous marks on thorax and abdomen . . . . . *signaticollis*.  
 { Black, with disk of elytra red . . . . . *semitectus*.
- 32 { Wholly rufous, a little darker along the margins . . . . . *amputatus*.  
 { Not wholly rufous or testaceous . . . . . 33
- 33 { Rufo-testaceous. Elytra encircled with black . . . . . *circumscriptus*.  
 { Testaceous, marked with black or piceous . . . . . 34
- 34 { Head, front, and thorax, except the sides and base, black . . . . . *melanocephalus*.  
 { Head and thorax with small black marks. Scutellum and most of elytra  
 { black . . . . . *varius*.
- 35 { Slightly convex . . . . . 36  
 { Flat and depressed . . . . . 37
- 36 { The sides darkest . . . . . *adustus*.  
 { The sides lightest . . . . . *decorus*.
- 37 { Thorax with four longitudinal punctate striæ . . . . . *striaticollis*.  
 { Thorax without longitudinal punctate striæ . . . . . 38
- 38 { Coarsely punctate . . . . . *ferrugineus*.  
 { Finely punctate and shining . . . . . *politus*.
- 39 { Elytra punctate in striæ . . . . . *pubescens*.  
 { Elytra not striate . . . . . 40
- 40 { Dull and shagreened . . . . . *unicolor*.  
 { Rather dull and soft in texture . . . . . 41
- 41 { Elytra with scutellar region palest . . . . . 42  
 { Elytra with disk palest . . . . . *limbatus*.
- 42 { Thorax narrowest in front and sloping gradually from behind forward . . . . . 43  
 { Thorax very little narrower in front than behind, and with the sides nearly  
 { straight for a short space in the middle . . . . . *infinus*.
- 43 { Thorax black, with a narrow testaceous margin widest behind . . . . . *obliquus*.  
 { Thorax testaceous or piceous, darkest in the middle . . . . . *triangularis*.

## Genus BRACHYPEPLUS\*.

Erichs. in Germ. Zeitschr. iv. 245 (1843).

Caput sulcis antennariis convergentibus. Labrum haud bilobum. Epistoma porrectum. Thorax basi truncata, angulis posticis subrectis. Elytra striata vel costata. Abdomen segmentis 1mo et 2do plus minusve brevibus, 3tio et 4to majoribus, 5to maximo, ultimis tribus expositis, segmentis expositis thorace longioribus fimbriisque distinctis instructis. Tibiæ apice extus canaliculatæ.

Body long, and in most species depressed. Head rather small. Epistome somewhat projecting. Eyes rather small. Antennæ a little longer than the head, the first article somewhat enlarged and widened on the outer side, the second a little thicker than those which follow, the third somewhat elongate, the rest gradually smaller, the two before the club slightly increased in breadth, the club usually round. Antennal grooves narrow, slightly converging. Labrum rounded in front, with a feeble trace of a division in the middle, sometimes with a notch on each side. Mandibles usually with two small teeth behind the point. Maxillæ short, with a brush of hairs at the end and on the inner side. Maxillary palpi moderately short, somewhat longer than the maxillæ, the first article short, the second unequal and large, the third shorter, the fourth longer and usually tumid. Ligula corneous, with a broad ciliated membranous lobe on each side. Labial palpi short, the first article very small and slender, the second thick, the third somewhat more compressed, truncate at the point. Mentum broad, bi-emarginate, with a prominent tooth in the middle. Thorax about the breadth of the elytra, transverse, broader than long, somewhat narrowed in front, with the apex feebly emarginate and the base truncate, straight or slightly sinuate, the posterior angles nearly right angles, and the sides with a narrow margin, which in some species is fringed with hairs. Prosternum not projecting. Metathorax without axillary pieces. Scutellum variable in form, generally transverse. Elytra costate or striate, short, truncate, margined on the sides, the exterior apical angles rounded. The abdomen more or less parallel; above with three segments exposed, which are longer than the thorax, but not so long as thorax and elytra united; below with the first two segments shorter than the rest (in the subgenera *Liparoepplus* and *Adocima* very little shorter), the two following somewhat longer, the last the longest of all. All the exposed dorsal segments have a broad well-marked fimbria along the margin, extending in a ring across the segment under the immediately preceding segment. The under side of the abdomen is also generally furnished with a slight indication of fimbriæ; in some of the species, more particularly in *Adocima bella*, there is as well-defined a fimbria on the under side as on the upper; and in almost all the species of *Brachypeplus* and its allies they extend in a more or less developed ring across the anterior margin of the segment below as well as above. In most of them this is concealed from view by the overlapping of the segment in front; but in some it can be very distinctly

\* The name *Brachypeplus* has been previously used for a genus of Hymenoptera; but it seems to be carrying purism too far to propose to change a well-established name merely because it has been previously used in the nomenclature of another class of animals. The promulgation of any such new names may properly be objected to for the future, and disowned whilst they are still fresh, but after they have acquired currency I do not think they should be meddled with. The practical mischief done by such double employment of names is much less trifling than the inconvenience caused by changing them.

seen, and in *Adocima* it is very marked\*. The pygidium in the males (?) has a short additional anal appendage. The stigmata are on the upper side, close to the fimbriæ. Legs short. Coxæ of middle legs near each other. The thighs below with a flat channel for the reception of the tibiæ, which have at the apex on the outer margin a small channel for the reception of the tarsi; the inner side of the apex has small terminal spurs. The tarsi can scarcely be said to be dilated; the first three articles have a brush of hairs beneath; the last article, longer than all the rest put together, has simple claws.

*Position and Affinities.*—COLASTUS. BRACHYPEPLUS. CILLÆUS.

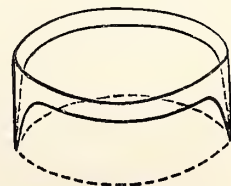
The species included in this genus may be divided into various subgenera, which arrange themselves naturally together according to the countries from which they come. The chief characters are the following:—1. In the New Holland species the margins of the thorax are ciliated or fringed with hairs, and the lobes of the ligula are very slightly developed. 2. In the Caffrarian and East Indian species the margins of the thorax are not fringed, and the lobes of the ligula are well developed. 3. In the species from West Africa and South America the margins of the thorax are not fringed, and the lobes of the ligula are very slightly developed. And these, again, may be subdivided into other sections.

The following dichotomous Table may save time in the determination of the section to which the species belong:—

{	Abdomen with the first two segments considerably shorter than the rest . . .	1
	Abdomen with the first two segments very little shorter than the rest . . .	5
1 {	Margins of thorax fringed with hairs (the ciliation sometimes not visible without a lens) . . . . .	2
	Margins of thorax not fringed with hairs . . . . .	3
2 {	Broad, convex, the first article of the antennæ greatly developed . . . .	<i>Onicotis</i> .
	Depressed and elongate, with the first article of the antennæ not unusually developed . . . . .	<i>Tasmus</i> .
3 {	Pubescent . . . . .	4
	Not at all or very slightly pubescent . . . . .	<i>Leiopeplus</i> .
4 {	Mandibles with the apex bicuspid or tricuspid. Abdomen with the pygidium longer than broad, so that it appears rapidly attenuated behind . . . .	<i>Selis</i> .
	Mandibles with the apex pointed. Abdomen with the pygidium not longer than broad, so that it does not appear rapidly attenuated behind . . . .	<i>Brachypeplus</i> proper.
5 {	Depressed . . . . .	<i>Adocima</i> .
	Convex . . . . .	<i>Liparopeplus</i> .

\* This shows that the explanation of the fimbriæ which I have given at p. 256 does not apply to all the forms of this section. It does apply to most of them, as can be easily seen by a dissection of the segments of *Colastus*, *Carpophilus*, &c.; but the *Brachypeplidæ* form an exception; and the occurrence of this deviation in that section would form a good sectional character were it not that in many species it can scarcely be seen without destroying the insect. The structure of the segments where fimbriæ occur both above and below them can be easily explained by imagining a repetition of the arrangement in the simpler type, where they occur only on the dorsal surface, the fimbriæ and transverse continuation of them as rings both above and below forming the framework into which the remainder of the segment, viz. a dorsal plate and a ventral plate, respectively fit.

Fig. 46.



N.B. Rounded to show more clearly the supposed structure.

The *Brachypepli proper* may be divided into those

- A. With the lobes of the ligula rounded—South American and Caffrarian species.
- B. Those with them not rounded (elongate, concave, &c.)—Asiatic species.

Which last, again, may be divided

- $\alpha$ . Into those with a transverse quadrangular scutellum—Bornean and Malayan species,
- $\beta$ . And those with a transverse but not quadrangular scutellum—East Indian species.

(Subgenus ONICOTIS (ὄνικος and ὠτίς, eared like an ass).)

Corpus sat convexum, fere glabrum, lateribus fortiter ciliatis. Antennæ articulo basali valde dilatato. Mandibulæ latæ, compressæ, dilatatæ, dente subito exserto. Ligula lobis curtis circumplicatis. Abdomen segmentis 1mo et 2do brevibus.

Body somewhat convex, oval, almost glabrous, with a dense stiff fringe of hairs all round the sides both of thorax, elytra, and abdomen. Antennæ with the basal article very largely developed, as in *Amphotis*, but to a greater extent (Pl. XXXIV. fig. 10 *a*), and fitting into a vacant space in front of the eye, so that the profile of the head when the antennæ are retracted is continuous; the remaining articles as in the other species of *Brachypeplus*. Labrum transverse, with a notch on each side of the middle. Mandibles broad, flat, with a short sharp tooth, slightly serrated behind, projecting abruptly from the broad margin (Pl. XXXIV. fig. 10 *g*). Maxillæ and maxillary palpi as in other *Brachypepli*. Ligula with short membranous lobes, which are apparently folded upon its front and back (Pl. XXXIV. fig. 10 *e*). Mentum broad, bi-emarginate. Labial palpi with the second article longest, and third subconical. Eyes triangular above, rounded beneath, and margined above by a narrow segment of the head separated from the rest by a deep groove, so as to look like an eyelid; the basal article of the antennæ, lying in front of the eye when at rest, protects it. Thorax narrowest in front. Scutellum triangular, its apical angle rounded. Elytra eostate. Abdomen as broad as the elytra, with the pygidium rounded; all the segments margined, the first and second considerably shorter than the rest; fimbriæ simple and parallel, small on the pygidium.

1. BRACHYPEPLUS AURITUS. (Plate XXXIV. fig. 10.)

Elliptico-ovalis, convexus, nitidus, ferrugineo-piceus, elytris nigris; capite et thorace partim fortiter punctatis, partim lævibus; elytris erenato-striatis; abdomine leviter punctato. Long.  $2\frac{2}{3}$  lin., lat.  $1\frac{1}{6}$  lin.

Habitat in Australia in nidis apum.

Elliptic-oval, convex, shining, ferrugineo-piceous, with the elytra black. Texture above rather hard, below flexible and elastic. Head with two large foveæ on the inner side of each eye, leaving a prominent smooth nasal ridge in the middle; a few punctures behind. Thorax convex, smooth, with a few punctures, chiefly in patches, which are for the most part in foveæ or depressions; the punctures made as if from behind forwards; there is a double ovate fovea on each side of the middle in front, another on each side behind, more apart, and another, less deep depression along the margin backwards from the anterior angle; slightly emarginate and bisinuate in front, sides sloping forwards and rounded-in in

front; anterior angles obtuse, posterior projecting a little backwards. Scutellum transverse, triangular, with the apical angle rounded, depressed at the base, which gives it the appearance of being pentangular. Elytra deeply crenate-striate, the punctures in the striae close and transverse, the striae reaching neither to the base nor the apex; the stria next the suture deeper than the rest and wider at the base than at the apex, arising from two striae being there united; the striae become effaced at the sides; at the shoulder they are shortened; there are only six of the full size: the sides are deeply declinate, the margins expanded, and there is a deep longitudinal hollow along the margin near the base; along the apex the elytra become depressed for a short narrow space, so that they fit closely to the surface of the abdomen; the apex is truncate, nearly straight; the sutural apical angles right angles, the exterior apical angles obtuse and somewhat rounded. Abdomen with the segments margined with a double line; fimbriae not broad, simple, and subparallel with the sides—except on the pygidium, where they are short, broad at the base, and soon disappear; each segment with stigmatic depressions on either side; very finely punctate in the centre, coarsely and irregularly on each side. Underside of the insect hollowed (when turned up, it is like a decked boat with bulwarks all round); shining, finely punctate, and slightly pubescent; densely ciliated all round with stiff, curved ferruginous setae.

From New South Wales (Sydney district).

I first received a single specimen of this species from Mr. Sharp MacLeay, and was puzzled by its unusual form and structure, which seemed to indicate a peculiar habit of life. Some light has lately been thrown upon this, however, by Mr. Frederick Smith of the British Museum, who has received a number, both of the larva and perfect insect, alive, in the nest of a wild bee sent from Australia, and which were devouring the substance of the nest. Its peculiar form and structure are suggestive of arrangements for defence analogous to those of the limpet and other animals which occasionally have to stand a siege. Its texture is too hard for the army among which it has intruded itself to penetrate with their weapons. When placed on a level surface, its margins are closely applied to the ground all round. The upper surface is an elliptical dome, and the segments and joints are guarded with peculiar care—the unguarded chinks which exist about the eyes in other species being in this one defended by a special gate in the shape of the first article of the antennae, the beauty and exactitude of whose fitting require to be seen to be appreciated. The elytra are depressed at the apex, so that they may lie close to and continuous with the abdomen; and the hollow underside and ciliated or fringed margins seem to be adaptations for the purpose of enabling it to retain its place against efforts to remove it. The fringe of strong, stiff hairs, extending all along the sides of the thorax, elytra, and abdomen, has in all probability something to do with this. It might almost be thought that this hollow underside, with its enclosing margins, indicates some pneumatic arrangement for holding on like a limpet. It is easy enough to conceive how this might be done: the stigmata, being on the upper side of the abdomen, give the means of swelling out the body below, so as to leave scarcely any hollow, as it is soft and flexible; then, on the air being expelled, the belly would be drawn in and a vacuum left below, which should have the desired effect.

## (Subgenus TASMUS\*.)

Corpus depressum, elongatum, pubescens. Thorax marginibus ciliatis. Mandibulæ leviter bidentatæ. Ligula lobis curtis circumplicatis. Abdomen segmentis 1mo et 2do brevibus.

Body depressed, elongate, pubescent. Eyes small, reaching the base of the head. Mandibles feebly bidentate at the apex. Labrum short and transverse. Ligula short, with membranous lobes, very little projecting, apparently folded round and united to the ligula on the front and back. Labial palpi with the last article longest, straight on the inner side, conico-rounded on the outer. Thorax fringed with hairs at the margins. Abdomen as broad as the elytra, not gradually attenuated, the first and second segments considerably shorter than the rest; fimbriæ distinct, subparallel except on the pygidium.

## 2. BRACHYPEPLUS BASALIS.

Erichs. in Wieg. Arch. f. Naturg. Jahrg. viii. Bd. 1. 149. 54 (1842).

Parallelus, vix nitidus, niger, antennis, tibiis tarsisque rufis; elytris subtiliter striatis, macula magna basali subtriangulari testaceo-rufa. Long.  $1\frac{2}{3}$  lin., lat.  $\frac{3}{5}$  lin.

Habitat in Tasmania.

Parallel, very slightly shining, black. Antennæ rufous. Head closely punctate, in front slightly bifoveolate, very slightly nigro-pubescent, with the mouth rufous and palpi testaceous. Thorax a little shorter than broad, slightly narrowed in front, with the sides a little rounded, the posterior angles somewhat acute, densely but lightly punctate, slightly nigro-pubescent, the sides griseo-pubescent, the lateral margin reflexed; rufo-piceous, densely fringed with short hairs. Scutellum large, transverse, densely punctate. Elytra rather more than a half longer than the thorax, faintly striate, with the interstices punctulated, nigro-pubescent, with a large basal subtriangular testaceo-rufous patch clothed with longer pubescence of the same colour, less marked near the suture. Abdomen faintly and densely punctate, slenderly nigro-pubescent, with the antepenultimate segment luteo-pubescent on the back; fimbriæ, except on the pygidium, widest behind; under side of abdomen slightly griseo-pubescent. Legs piceous, with the tibiae and tarsi rufous.

From Van Diemen's Land.

## 3. BRACHYPEPLUS BINOTATUS. (Pl. XXXIV. fig. 5.)

Affinis *B. basali*: angustus, nitidus, niger; antennis basi rufa, clava nigra; elytris macula basali aurantiaca transversa, ad suturam interrupta; abdomine piceo, segmentorum marginibus rufescentibus. Long.  $1\frac{2}{3}$ –2 lin., lat.  $\frac{1}{2}$ – $\frac{3}{5}$  lin.

Habitat in Victoria in Australia.

Allied to *B. basalis*. Narrow, black, shining. Antennæ rufous, with the club dark. Head finely punctate, bifoveolate in front. Thorax much punctate, narrowest in front, but with the sides nearly parallel, and slightly rufescent and translucent towards the

Fig. 47.

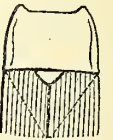


Fig. 48.



\* Derivative from Tasmania, the habitat of the species which was first described.

posterior angles, fringed with hairs. Scutellum moderate, punctate. Elytra nearly twice as long as the thorax, striate, with the interstices bearing fine, delicate, distinct punctures; the basal half marked with a broad deep-orange-coloured band, interrupted at the suture by a space as broad as the scutellum, clothed with pubescence of the colour of the part on which it is found. Abdomen piceous, paler in the middle, and with the margins rufescent, finely punctate; fimbriæ, except on the pygidium, widest behind. Legs testaceous.

From Victoria. More common in collections than *B. basalis*.

#### 4. BRACHYPEPLUS BLANDUS.

Affinis *B. binotatus*: oblongo-ovatus, latior, magis pubescens; antennis rufis, clava fusca; prothorace lateribus parum sinuatis, expansis et rufescentibus; elytris thorace parum latioribus, macula basali aurantiaca ad suturam interrupta; abdomine supra segmento antepenultimo aurantiaco, penultimo medio piceo-rufo, lateribus piceis; pygidio piceo, subtus piceo-ferrugineo. Long. 2 lin., lat.  $\frac{3}{4}$  lin.

Fig. 49.



Habitat in Victoria in Australia.

Very closely allied to *B. binotatus*. Oblong-ovate, broad, very pubescent. Antennæ rufous, with the club dusky. Head finely punctate and bifoveolate in front. Thorax broader, more expanded than in *B. binotatus*, thickly clothed with long black pubescence, and with the sides more rufescent and densely fringed with short hairs. Scutellum moderate. Elytra costate, the striæ between the costæ comparatively coarsely and transversely punctate, black, with a broad orange-coloured band stretching across the basal half, interrupted at the suture. Abdomen piceous above, piceo-ferruginous below, very pubescent, above with the first exposed segment orange-coloured, the second exposed segment piceo-rufous in the middle; pygidium piceous black; fimbriæ, except on the pygidium, widest behind. Legs rufo-testaceous. The pubescence throughout is long and plentiful, and of the colour of the surface below it.

From South Australia, between Melbourne and the gold-diggings.

The three species, *B. basalis*, *B. binotatus*, and *B. blandus*, are very like each other, and are confounded in most collections. The following distinctions will enable them to be easily recognized and separated:—*B. blandus* is broader than either of the other two. The club of the antennæ is red in *B. basalis*, black or dusky in *B. binotatus* and *B. blandus*. The basal patch on the elytra in *B. basalis* is dull and testaceo-rufous; in the others it is deep orange, enlivened by the silky sheen of a lighter orange-coloured pubescence: in *B. basalis* it is a large, single, triangular patch around the scutellum; in the others it is separated into two nearly square patches by a space at the suture as broad as the scutellum. In *B. basalis* the elytra are a very little larger and wider behind. In *B. basalis* and *B. binotatus* they are not costate but merely striate, and the flat interstices are regularly and finely punctate, the punctures small, round, and separate from each other. In *B. blandus* it is the striæ which are punctured, and their width and depth are increased, so that the interstices stand up as narrow impunctate costæ, and the punc-

tures are coarse, transverse, and rugose. The abdomen above is black, or nigro-piceous, with testaceous pubescence on the penultimate segment, in *B. basalis*; in *B. binotatus* the margins of the segments in all, and frequently the segments themselves, are slightly rufescent, especially the middle of the penultimate segment; and in *B. blandus* the abdomen is ferrugineo-piceous, with the whole of the antepenultimate segment orange-coloured and the middle of the penultimate segment rufous.

##### 5. BRACHYPEPLUS MACLEAYII.

Oblongus, modice latus, subparallelus, postice paululum latior, leviter crebre punctatus, subtiliter pubescens, lateribus dense testaceo ciliatis, elytris levissime striatis; pieco-niger, ore, thoracis lateribus, clytris versus basin pedibusque piceo-rufis; subtus ferrugineo-piceus. Long.  $2\frac{1}{3}$  lin., lat.  $\frac{5}{6}$  lin. Fig. 50.



Habitat in Australia.

Oblong, subparallel, moderately broad, a little broadest behind, very finely and very thickly punctate (the punctures minute points), finely and shortly pubescent, the pubescence of the colour of the parts where it is present; nigro-piceous, with the mouth, antennæ, sides of the thorax, the basal margin of the elytra, and the legs piceo-rufous; sides densely ciliated. Head bifoveolate in front. Thorax broader than long, but not so transverse as in most of the other species, apex emarginate, anterior angles slightly projecting and rounded; sides narrowest in front, gently rounded, widest in the middle, margined, expanded within the margin, more especially towards the posterior angles, which are nearly right angles but somewhat acute and looking slightly backwards; the base slightly bisinuate: the fringe of hairs along the sides well developed, stiff, testaceous. Scutellum rounded. Elytra nigro-piceous, slightly rufous at the very base, not broader than the thorax, most faintly striate, the striæ not punctate themselves, but in certain lights having the appearance of being punctate from the general fine semirugose punctuation of the surface of the elytra; there is a longitudinal depression on each side of the suture immediately behind the scutellum; sides sharply deelineate, more particularly in front, strongly margined, and densely fringed with testaceous hairs; apex truncate, nearly straight; external apical angles rounded, sutural apical angles right angles. Abdomen above somewhat convex in the middle; fimbriæ as broad behind as before, curved, united by a narrow dorsal ring concealed from view by the preceding segments; under side ferrugineo-piceous. Legs rufous.

The fringe of hairs along the sides is stronger and longer in this species than in *B. basalis* and *B. planus*, but not so much so as in *B. auritus*.

From Australia (Sydney), &c. I have received a single specimen from Mr. Sharp MacLeay.

##### 6. BRACHYPEPLUS PLANUS.

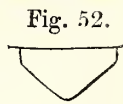
Erichs. in Wieg. Arch. f. Naturg. Jahrg. viii. Bd. 1. 149. 53 (1842).

Elongato-oblongus, niger, opacus, antennis pedibusque rufo-piccis; scutello semicirculari; elytris subtiliter striatis. Long.  $2\frac{1}{2}$ –3 lin., lat.  $\frac{7}{8}$  lin. Fig. 51.

Habitat in Tasmania.



Oblong, depressed, black, opaque. Antennæ rufo-piceous. Head thickly punctate, very slightly nigro-pubescent, in front obsoletely bifoveolate, the mouth piceous. Thorax a little shorter than broad, very little narrowed in front, thickly punctate, faintly nigro-pubescent, flat, with the margin reflexed, densely fringed with short hairs; sides lightly rounded, posterior angles right angles. Scutellum (fig. 52) large, subpentagonal, punctulate, nigro-pubescent. Elytra flat and smooth, a half longer than the thorax, truncate, depressed, lightly striate, with the interstices obsoletely rugulosely punctate in rows. Abdomen above thickly and lightly punctate, with the antepenultimate segment entirely and the penultimate at the base fulvo-pubescent; fimbriæ, except on the pygidium, widest behind. Metathorax and ventral segments of abdomen griseo-pubescent. Legs piceous; tarsi fulvous.



From Van Diemen's Land. Not common.

#### 7. BRACHYPEPLUS CASTANEIPES.

*B. plano* valde affinis; minor, angustior, prothoracis lateribus paulo rectoribus, antice minus rotundatis; antennis pedibusque castaneis vel ferrugineo-piceis. Long.  $2\frac{1}{2}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in Australia.

This is the South-Australian representative of the Tasmanian species, *B. planus*. It is a good deal smaller, and apparently narrower, although, perhaps, the proportions are the same. In every detail it tallies very closely with that species, except, perhaps, that the sides of the thorax are straighter and less rounded-in in front. The inflexed margins of the elytra and the under side of the thorax are ferrugineo-piceous, and the antennæ and legs are still lighter, instead of being dark piceous as in *B. planus*; but this variation of colour is a character of small value.

This will be regarded as a species or a variety according to the predisposition of the reader.

From Melbourne.

(Subgenus BRACHYPEPLUS proper.)

Corpus elongatum, plus minusve depressum et pubescens. Thorax marginibus haud ciliatis. Ligula lobis sat prominentibus. Abdomen segmentis 1mo et 2do brevioribus, pygidio inter fimbrias basi longitudine latiore.

Body more or less depressed, elongate, usually pubescent. Mandibles either without a tooth behind the point, or with a very small one almost effaced. Labrum transverse, with the margin feebly bi-emarginate. Ligula short, with the membranous lobes rather prominent. Thorax with the sides not fringed with hairs. Scutellum transverse, rounded at the apex, pentagonal or quadrangular. Abdomen with the first two segments considerably shorter than the rest; not rapidly attenuated behind; the breadth of the pygidium between the fimbriæ at the base greater than its length.

The non-ciliation of the margins serves to distinguish this subgenus from the subgenera *Onicotis* and *Tasmus*, the moderate attenuation of the apex of the abdomen from the subgenus *Selis*, its pubescence from *Leiopeplus*, and its short first two segments from *Liparopeplus* and *Adocima*.

## SECTION I. Ligula with the membranous lobes rounded.

## 8. BRACHYPEPLUS DEPRESSUS.

Erichs. in Germ. Zeitschr. iv. 247 (1843).

Niger, depressus, subopaeus, tibiis tarsisque ferrugineis; prothorace lateribus haud sinuatis, postea reflexis; elytris striatis, interstitiis seriatim punctatis. Long. 2 lin., lat.  $\frac{2}{3}$  lin.

Fig. 53.



Var. Elytris interdum puneto humerali obsoletissime testaceo.

Habitat in Caffraria.

Depressed, somewhat opaque, black, faintly nigro-pubeseent. Antennæ ferruginous, with the club piceous. Head faintly punctulate, lightly bifoveolate in front; mouth piceous. Thorax as broad as the elytra, rather faintly rugulosely punctate, shorter by a half than its breadth, narrowed in front; apex emarginate; anterior angles obtusely rounded; sides reflexed narrowly in front, more widely towards the posterior angles, which are nearly right angles and slightly looking back; base bisinuate. Scutellum transverse, griseo-pubeseent. Elytra a little longer than the thorax, subeostate, punctate-striate, the interstices punctate in rows, subrugulose, irregularly depressed; a depression beside the scutellum, one within the shoulder, an oblique large slope behind the shoulder, sometimes with a testaceous spot on the shoulder, griseo-pubeseent at the base; apex broadly rounded at the exterior angles; sutural apical angle a right angle. Abdomen thickly and lightly punctate; fimbriæ broad, with the inner margin curved, depressed, of nearly equal breadth behind and before, except on the pygidium. Body below faintly griseo-pubescent. Legs piceous, the tibiæ and tarsi ferruginous.

From the Cape of Good Hope, Natal, and other parts of South Africa.

## 9. BRACHYPEPLUS DEYROLLEI.

*B. depresso* valde affinis; paulo minor, prothorace minus transverso, lateribus postice rectoribus; niger, elytris ad basin piceo-nigris et ad suturam paulo ferrugineo-piceis, minus fortiter eostatis et punctatis. Long.  $1\frac{1}{2}$  lin.

Habitat in Guinea.

Nearly allied to *B. depressus*; rather smaller; the thorax not so transverse, and with its sides more parallel posteriorly. Black. Elytra nigro-piceous at the base and somewhat ferrugineo-piceous at the suture; not so deeply punctate nor so much costate as in *B. depressus*.

From the coast of Guinea. I have seen only a single example, which is in the collection of M. Deyrolle at Paris.

## 10. BRACHYPEPLUS CAFFER.

Boheman, Ins. Caffr. i. 561 (1848).

Oblongus, depressus, piceus, subnitidus, tenuiter cinereo pubeseens; labro, antennis (clava excepta), tibiis tarsisque rufo-piceis; prothorace confertim punctulato; elytris seriatim parum profunde punctatis, interstitiis leviter earinatis. Long. 2 lin., lat.  $\frac{3}{4}$  lin.

Fig. 54.



Habitat in regione fluminis Limpoponis in Africa australi.

Oblong, depressed, piceous, somewhat shining, and feebly cinereo-pubescent. Head shorter than broad, nigro-piceous, faintly and thickly punctate, with the labrum and palpi rufo-ferruginous. Antennæ short, rufo-piceous, sparingly pubescent, with the club rounded and fuscous. Thorax a half shorter than its breadth, nigro-piceous, feebly griseo-pubescent, somewhat shining, above somewhat convex, faintly variolosely punctate, the punctures very shallow large pits, from the centre of which the hairs spring; in front lightly emarginate; anterior angles subobtuse; sides from the apex to the base with the margins rather broadly reflexed, obscurely ferruginous, straight except towards the apex, with the posterior angles right angles and not pointing backwards. Scutellum short, broad, nigro-piceous, faintly and closely punctate, slightly pubescent, with the apex subtruncate. Elytra scarcely a half longer than the thorax, and not broader than its base, nigro-piceous, somewhat convex, variolosely punctate (not very deeply) in rows in the same way as the thorax, the interstices narrow, slightly keeled; the sides reflexed and margined, straight; truncate at the apex, with the exterior apical angles rounded; the shoulders almost rectangular, not prominent. Abdomen above punctate and rather thickly pubescent; the fimbriæ well marked, widest behind, except on the pygidium, and with a tubercle in the anterior corner, close to the stigmatic depression, which is very deep. Underside nigro-piceous, faintly and closely punctate. Legs obsoletely punctulated, sparingly pubescent; thighs piceous; tibiæ and tarsi rufo-piceous.

Nearly allied to *B. depressus*. The peculiar variolose punctuation of this insect serves to distinguish it from that species, as well as from any others which are likely to be confounded with it.

From the neighbourhood of the river Limpopo, in South-east Africa.

# 11. BRACHYPEPLUS PARALLELUS.

Elongatus; angustus, niger, subopacus, fortiter punctatus; prothorace elongato, Fig. 55.  
lateribus fortiter reflexis, subparallelis, postice sinuatis; elytris fortiter  
punctato-striatis; antennis pedibusque ferrugineo-piceis. Long.  $2\frac{1}{4}$  lin.,  
lat.  $\frac{2}{3}$  lin.



Habitat in Natalia.

Narrower and more elongate than *B. depressus*. Antennæ ferrugineo-piceous. Head finely but very thickly rugosely punctate, with two flat depressions in front. Thorax somewhat narrower than the elytra, deeply, distinctly, and thickly punctate, somewhat longitudinally convex; oblong, with the sides somewhat sinuate and the margins rather deeply reflexed; anterior angles declinate, obtusely rounded; apex emarginate, emargination bisinuate; posterior angles nearly right angles; base bisinuate. Elytra about a half longer than the thorax, deeply punctate-striate, oblong and parallel, without the depressions on the surface which occur in *B. depressus*, truncate at the apex, with the exterior angles rounded. Abdomen finely punctate and pubescent; fimbriæ with the inner margin slightly curved; the stigmatic depression is not so marked as in *B. Caffer*, and the tubercle within it is absent, or nearly so. Legs ferrugineo-piceous.

From Natal.

## 12. BRACHYPEPLUS PILOSELLUS.

Oblongus, parallelus, depressus, leviter punctatus, parce breviterque pubescens; picco-brunneus, prothoracis lateribus, sutura abdomineque dilutioribus; pedibus testaceis; clytris subcostatis, interstitiis punctatis.

Long.  $1\frac{1}{2}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in Sierra Leone.

Fig. 56.



Oblong, parallel, depressed, slightly punctate; under the microscope it is seen to be sparingly sprinkled with short, stiff testaceous hairs; piceo-brunneous, paler on the sides of the thorax, and with the elytra ferruginous-piceous. Head slightly punctate; mouth testaceous. Antennæ ferruginous. Thorax slightly punctate, most so on the sides and posterior angles, and with short, rather stiff hairs standing in all directions; transverse, broader than long, narrower in front, and with the apex scarcely emarginate; sides gently rounded, margined, and reflexed (most widely behind and in front); anterior angles obtuse and slightly rounded at the points; posterior angles nearly right angles; base truncate, slightly bisinuate, and faintly margined. Scutellum transverse, nearly quadrate, punctate. Elytra subcostate, the interstices feebly rugosely punctate-striate, most so towards the base, the costæ bearing short hairs; the sides declinate, slightly rounded, widest a little behind the middle, margined; the suture and a narrow basal line paler; apex truncate, almost straight, with the sutural and exterior angles rounded. Abdomen very faintly punctate and faintly pubescent; fimbriæ broad, flat, expanded, and well marked, subparallel except on the pygidium, but rather widest behind. Underside faintly punctate and pubescent. Legs testaceous.

This species is interesting from its affinity to *B. anceps*, the commonest species on the opposite coast of South America. It is like it, but smaller, darker, and sparsely clothed with stiff hairs; the thorax less parallel, more rounded, and more strongly margined; the scutellum more transverse; the sides of the elytra not so parallel, widened behind the middle; and the fimbriæ of the abdomen wider, flatter, and more prominent.

From Sierra Leone and Portuguese Senegal. I am indebted for this species to Mr. Pascoe, who has had the kindness to give it up to me, although unique in his collection. I have placed it in the British Museum.

## 13. BRACHYPEPLUS MUTILATUS.

Erichs. in Germ. Zeitschr. iv. 246 (1843).

*Ips Brasiliensis* (Faldermann, Dej. Cat. 134, ed. 1837).

Oblongus, subdepressus, niger, subopacus, pube fulvo-grisca depressa sparsim vestitus, ore pedibusque ferrugineis; prothorace ante medium cito angustiore; scutello transverso; elytris thorace sesquilongioribus, striatis, interstitiis seriatim punctatis, basi suturaque testaceis. Long. 2 lin., lat.  $\frac{5}{8}$  lin.

Fig. 57.



Habitat in insulis Indicis occidentalibus.


Oblong, subdepressed, black, slightly shining, sparingly clothed with a slight, depressed, fulvo-grisous pubescence. Antennæ ferruginous, with the club piceous. Mouth ferruginous. Head faintly and sparsely punctured, obsoletely bifoveolate in front. Thorax

rather shorter than broad, slightly narrowed in front, with the sides somewhat rounded, thickly punctured, with the lateral margin reflexed; piceous; paler on the sides. Scutellum transverse, with the apex rounded, punctulate. Elytra a half longer than the thorax, faintly striate, with the interstices punctate in rows, subrugulose, with the base and suture obsoletely testaceous. Abdomen thickly and faintly punctate, somewhat shining; fimbriæ with the inner margin much curved, wide behind except on the pygidium. Legs ferruginous; thighs picescent.

From St. Thomas's and other West Indian islands; also from the neighbouring coast of Guiana, &c.

#### 14. BRACHYPEPLUS ANCEPS.

*B. diluticollis* (Motsch.).


Oblongus, depressus, testaceo-fuscus, capite et elytris obscurioribus, subopacus, fusco pubescens, subtiliter ruguloso-punctatus; elytris leviter costatis, interstitiis subgeminato-punctatis; pedibus testaceis. Long.  $2\frac{1}{2}$  lin., lat.  $\frac{3}{4}$  lin. 

Habitat in Brasilia, Guiana, Columbia, &c.

Oblong, more than twice as long as broad, depressed, testaceo-fuscous, darkest on head and elytra, rather opaque, finely rugulosely punctate, fusco-pubescent. Antennæ testaceous; club fuscous, except the last article, which is testaceous. Head with two foveæ in front; mouth paler. Thorax with margins paler than disk, truncate at the base, somewhat quadrate but shorter than broad, margined; sides nearly parallel, not much rounded in front; anterior angles obtuse and somewhat rounded, posterior almost right angles, very slightly turned back. Scutellum not very large, rugosely punctate, transverse, subquadrangular. Elytra longer than thorax, each with eight or nine very narrow raised lines running longitudinally, the interstices subrugulosely punctate in double rows. Exposed dorsal portion of abdomen about as long as the elytra; the segments rather long, slightly shining, finely punctate, and faintly pubescent; fimbriæ nearly parallel, very little wider behind than in front. Legs testaceous.

From Trinidad, Guiana, Brazil, Columbia, the Amazons, &c.

#### 15. BRACHYPEPLUS PROLIXUS (Mus. Berol.).

Elongatus, angustus, subparallelus, longus, depressus, opacus, textura molli, crebre levissime punctatus, pubescens, nigro-fuscus, ore, antennarum basi, prothoracis lateribus pedibusque ferrugineo-piceis; thorace subquadrato; elytris costatis, interstitiis crebre leviter punctatis. Long.  $2\frac{1}{3}$ – $2\frac{2}{3}$  lin., lat.  $\frac{2}{3}$  lin. 

Habitat in Caraccas.

Elongate, narrow, long, depressed, subparallel, opaque, closely and very finely punctate, and pubescent, of rather soft texture, blackish brown. The head with two large foveæ in front; the mouth and base of antennæ ferrugineo-piceous. Thorax subquadrate, not emarginate in front, margined in front except in the middle; the sides ferrugineo-piceous, very slightly rounded and margined but scarcely expanded; the anterior angles declinate and slightly rounded, the posterior angles somewhat explanate, reflexed, obtuse,

and slightly rounded; the base slightly bisinuate, margined. Scutellum transverse, subquadrangular, punctate. Elytra a half longer than the thorax, costate; the interstices closely and lightly punctate, with the sides slightly declinate, margined, and very slightly sinuate, the exterior apical angles rounded, the sutural angles almost right angles. Abdomen smooth, very thickly and lightly punctate; fimbriæ nearly parallel, except on the pygidium. Legs ferrugineo-piceous.

From Caraccas. Collected by M. Sallé.

#### 16. BRACHYPEPLUS TENUIS.

Parvus, elongatus, oblongus, parallelus, niger, obscurus, pubescens, subtiliter punctatus; clytris subcostatis. Long.  $1\frac{1}{3}$  lin., lat.  $\frac{1}{3}$  lin. Fig. 60.

Habitat apud Lagoa Santa in Brasilia.

Small, elongate, slender, oblong, parallel, dull, black or nigro-piceous, pubescent, faintly punctate; under a powerful glass the punctures on the thorax are seen to be shallow variolose pits. Head bi-impressed in front. Antennæ with the base ferrugineo-piceous and the club fuscous. Thorax a fourth broader than long, anterior angles rounded, the sides straight, posterior angles nearly right angles, a little pointed backwards, the base bisinuate. Scutellum transverse, subquadrangular, punctate and pubescent. Elytra punctate-striate, with the pubescence disposed in lines, giving them a subcostate appearance; about twice the length of the thorax; apex of each elytron very slightly rounded, exterior apical angles rounded. Abdomen about as broad as the elytra; fimbriæ not very broad, the inner margin curved, widest behind except on the pygidium. Underside, with the middle of the last segment and the margin of the preceding, ferrugineo-piceous. Legs dull ferrugineo-piceous, pubescent.

This is the smallest species I have met with.

Described from a unique specimen found by M. Reinhardt, under the bark of dead trees, near Lagoa Santa in Brazil, and now in the Museum of Copenhagen.

SECTION II. Ligula with the membranous lobes prominent, but not rounded, on both sides.

\* Body not very broad. Scutellum rounded or transversely pentagonal.

#### 17. BRACHYPEPLUS ORIENTALIS.

Oblongus, subdepressus, leviter fulvo pubescens, subopacus, fusco-piceus, ore, antennarum basi, prothoracis lateribus, elytris pedibusque ferrugineo-testaceis; elytris costatis, interstitiis striato-punctatis. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{1}{2}$  lin. Fig. 61.

Habitat in Borneo.

Oblong, subdepressed, fusco-piceous, fulvo-pubescent, subopaque, with the mouth, the base of the antennæ, the sides of the thorax, the elytra, and the legs ferrugineo-testaceous. Head longitudinally bifoveolate in front, the epistome raised prominently between the foveæ. Thorax short, transverse, flat, lightly rugosely punctate, somewhat narrower and rounded in front, with the sides margined and slightly explanate; anterior angles rounded, posterior somewhat acute, a little pointed backwards, the base bisinuate and margined except in the middle. Scutellum broad, transverse, semicircular. Elytra

longer than the thorax, costate, with stiff testaceous hairs running along the costæ, the interstices transversely punctate-striate, the interstice next the suture depressed and more closely punctate; the sides parallel, somewhat declinate, and margined; the external apical angles broadly rounded, the sutural angles less so. Abdomen fuscous, slightly convex in the middle, very faintly punctate, the pubescence springing from the punctures (the punctuation not observable except with a powerful glass); fimbriæ nearly parallel. Legs testaceous.

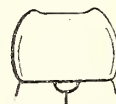
Found by Mr. Wallace in the fruit of the Durian (*Durio zibethinus*), at Sarawak in Borneo.

#### 18. BRACHYPEPLUS PATRUELIS.

Valde affinis *B. orientalis*; minus latus, paulo minus depressus, prothorace lateribus æqualiter levissime rotundato, basi fere recte truncato. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in India orientali.

Fig. 62.



So close to *B. orientalis* that it is with much hesitation I separate it. It is not so broad nor so depressed, more punctate, and the sides of the thorax are more equally rounded. In *B. orientalis* there is a slight tendency to sinuation near the posterior angles, which is absent in this species. *B. orientalis* has the thorax more depressed than the elytra, and has the base sinuate in front of the scutellum as well as on the sides, which is scarcely the case in this species. This is also lighter in colour, being wholly piceo-testaceous and a little more shining.

From the East Indies.

#### 19. BRACHYPEPLUS OMALINUS. (Plate XXXIV. fig. 7.)

Elongatus, oblongus, subdepressus, griseo pubescens, leviter punctatus, piceus, prothorace lateribus dilutioribus, ore, antennis (clava obscura excepta) pedibusque ferrugineo-testaceis; elytris costatis, luride testaceis, lateribus, sutura et apice tenuiter piceis. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{2}{3}$  lin.

Fig. 63.



Habitat in Taprobana.

Elongate, oblong, subdepressed, subopaque, lightly punctate and griseo-pubescent, piceous, with the sides of the thorax paler; the mouth, the antennæ (except the club, which is fuscous), and the legs ferrugineo-testaceous; the elytra of a lurid testaceous colour enclosed by a narrow piceous margin. Head lightly bi-impressed in front. Thorax transverse, subconvex, the sides subparallel and slightly narrowed in front, the anterior angles rounded, the posterior obtusely right angles, the apex slightly sinuate, the base bi-emarginate, the sides and part of the base next the sides slightly and narrowly margined. Scutellum transverse, semicircular, punctate. Elytra almost a half longer than the thorax, slightly costate, with a row of transverse punctures in the interstices; the sides margined and sinuate in the middle, the exterior angles rounded. Abdomen moderately convex; fimbriæ with the inner margin straight and oblique, wider behind than in front.

Allied to *B. orientalis*; it is smaller, narrower, and more convex, less pubescent, the

sides of the thorax more narrowly margined, and the posterior angles obtusely right angles and somewhat rounded instead of having the right angles sharp and looking a little backwards. The colour of the elytra is lurid testaceous instead of ferrugineo-testaceous.

From Ceylon.

20. *BRACHYPEPLUS NOTATUS*.

*B. orientali* affinis, sesquiminor, angustior, magis convexus, minus depressus : Fig. 64.  
piceo-brunneus, ore, antennarum basi, prothorace pedibusque ferrugineo-  
testaceis; elytris plaga magna transversali apicali indeterminata pallide  
testacea. Long.  $1\frac{1}{4}$  lin., lat.  $\frac{1}{2}$  lin.



Habitat in Taprobana.

Oblong, somewhat convex, slightly shining, punctate and pubescent, brunneo-piceous, with the mouth, the base of the antennæ, the thorax (more especially the lateral margins), the margins of the segments of the abdomen, and the legs ferrugineo-testaceous. Elytra with a large transversal, rounded, ill-defined pale testaceous patch near the apex, occupying nearly their posterior half. Head faintly punctate, bifoveolate in front. Thorax transverse, widest a little before the middle, broader than long, slightly convex, with the base truncate and nearly straight in front; the anterior angles obtuse and a little rounded, the posterior right angles, sides feebly rounded and margined. Elytra wider than the thorax, faintly costate or lineate, with hairs upon the costæ and with a row of rather large, shallow, irregular punctures on the interstices. Abdomen very faintly punctate; fimbriæ with the inner margin straight, very nearly parallel to the outer side.

From Ceylon. I am indebted for this species to the kindness of Mr. Nietner. I have placed it in the British Museum.

21. *BRACHYPEPLUS WALLACEI*.

Elongatus, oblongus, parallelus, depressus, punctatissimus, niger; prothorace Fig. 65.  
antice latiore; elytris subcostatis, interstitiis variolose seriatim punctatis; pedibus ferrugineo-piceis. Long.  $1\frac{2}{3}$  lin., lat.  $\frac{1}{2}$  lin.



Habitat in insula Mysol prope Ceram.

Oblong, elongate, flat, depressed, very thickly punctate, and very slightly pubescent on the sides and on the abdomen. Black, with the mouth, antennæ, and legs ferrugineo-piceous. Head very thickly and finely punctate, bifoveolate in front. Thorax slightly convex on the disk, broadest in front, apex emarginate; sides sloping from behind forwards, margined, and canaliculate at the margins, anterior angles projecting, declinate and rounded, posterior angles right angles and depressed; middle flat, very thickly, equally, and somewhat coarsely punctate; the punctures under a powerful glass are seen to be variolose. Scutellum triangular, very thickly and somewhat coarsely punctate. Elytra subcostate, the interstices with a row of flat, variolose, disk- or horseshoe-shaped punctures, the costæ towards the sides more prominent; sides vertically declinate, a little widest behind the middle; a little wider at the shoulders than the base of the thorax; shoulders not prominent, rounded; apex straight, truncate, sutural apical angles

right-angled, exterior apical angles rounded. Abdomen somewhat rugosely punctate and pubescent, the punctures variolose; the segments with a line along the posterior margin; fimbriæ with the inner margin nearly straight, and, on the pygidium, continuing parallel to the outer margin nearly to the apex. Legs ferrugineo-piceous.

From Mysol, an island to the north of Ceram. A unique specimen was found by Mr. Wallace, and is now in the British Museum.

\*\* Body broad. Scutellum quadrangular, or nearly so.

## 22. BRACHYPEPLUS LATUS.

Oblongus, latus, depressus, opacus, rugoso-punctatus, niger, cinereo pubescens; prothorace postice bifoveolato; elytris leviter costatis, interstitiis planis, rugoso-punctatis; tarsis testaceo-piceis. Long. 3 lin., lat.  $1\frac{2}{5}$  lin.

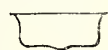
Fig. 66.



Habitat in Borneo prope Sarawak.

Oblong, broad, depressed, opaque, rugosely punctate, black, cinereo-pubescent. Head thickly but lightly rugosely punctate, deeply bifoveolate on each side in front; antennæ and mouth piceous; maxillæ testaceous. Thorax slightly shining, more strongly rugosely punctate, with a large, rather deep fovea on each side near the posterior angles, with the sides and base margined, narrower in front than behind, strongly bisinuate at the base, with the posterior angles nearly right-angled, rather sharp, and slightly pointing backwards, the anterior angles obtuse, rounded, and declinate; the sides are very slightly and almost imperceptibly ciliated. Scutellum (fig. 67) transverse, subrectangular. Elytra subquadrate, broader than long, feebly costate; the sutural costa straight, the rest oblique, with a long triangular interstice between the sutural and the second costa; the interstices flat, broad, irregularly rugosely punctate; the shoulders rather large, not very prominent; the sides rather deeply margined, not very much inflexed; the apex truncate and feebly margined, and the external apical angles rounded. Abdomen broad and expanded, the sides rounded; the fimbriæ rather broad, curved, and slightly raised at the inner margin. Underside thickly but less rugosely punctate. Legs rather slender, nigro-piceous; tarsi paler, testaceo-piceous.

Fig. 67.



There is a smaller variety found at Singapore, which differs in no respect, that I can see, except size. It is about  $2\frac{2}{3}$  lines in length and 1 line in breadth, instead of being 3 lines by  $1\frac{2}{5}$ .

It is interesting to find a tendency to the ciliated sides which are characteristic of the Australian *Brachypepli*, in a species inhabiting a country which approaches their locality.

Found under bark by Mr. Wallace at Sarawak and at Singapore.

## 23. BRACHYPEPLUS LOWEI. (Plate XXXIV. fig. 9.)

Oblongus, opacus, rugoso-punctatus, cinereo pubescens, niger, elytris disco rufo, tibiis tarsisque rufis; prothorace lateribus postice expansim foveolatis; elytris costatis, interstitiis striato-punctatis. Long. 3 lin., lat.  $1\frac{1}{6}$  lin.

Fig. 68.



Habitat in Borneo ad Sarawak.

Allied to *B. latus*, but narrower and smaller. Oblong, opaque, rugosely punctate, cinereo-pubescent; black, with the disk of the elytra rufous. Head and thorax as in *B. latus*, with the posterior foveæ of the latter less deep and more expanded, extending to the base and the sides. Elytra with a narrow black margin surrounding the rufous disk on every side; the costæ more marked than in *B. latus*; the interstices punctate-striate, narrower, and not flat. Abdomen with the fimbriæ raised and inner margin curved. Legs with the thighs black; knees, tibiæ, and tarsi rufous. In other respects like *B. latus*.

Found at Sarawak in Borneo, &c. I have named this species after Dr. W. H. Lowe, of Balgreen near Edinburgh, an excellent naturalist and a much-prized friend.

(Subgenus SELIS (σελις, a margin).)

Corpus elongatum, pubescens, depressum. Thorax marginibus haud ciliatis. Labrum leviter bilobum vel emarginatum. Ligula lobis subovatis. Abdomen postice cuneatum, pygidio basi latitudine longiore, fimbriis prominentibus.

Body more or less depressed, elongate, pubescent. Thorax with the sides not fringed with hairs. Labrum slightly bilobed or emarginate. Mandibles with the apex narrow and salient, the one bicuspid, the other with five or six small teeth. Ligula with the membranous lobes subovate. Scutellum rounded at the apex. Abdomen rapidly attenuated or wedge-shaped behind, the pygidium being longer than broad; fimbriæ prominent. In other respects nearly as in *Brachypeplus* proper.

This subgenus diverges more from the normal type of the *Brachypepli* than any of the sections into which I have divided them, except *Onicotis* and *Liparopeplus*; and these three might perhaps rank as separate genera of *Brachypeplidæ* instead of merely subgenera.

24. BRACHYPEPLUS CUNEATUS. (Plate XXXVI. fig. 11.)

Elongatus, antice oblongus et parallelus, subopacus, punctatus et parum pubescens; elytris costatis, piceo-brunneis; prothorace et abdomine testaceo-piceis. Long.  $2\frac{2}{3}$  lin., lat. 1 lin.

Habitat in insula Batchian.

Elongate, oblong and parallel in front, wedge-shaped behind, punctate, sparingly pubescent, subopaque, brownish piceous. Head dark brown, thickly punctate and slightly pubescent; epistome very short, widened a little in front, and with a slight, narrow, impunctate, almost imperceptibly raised line running longitudinally up the middle of it; the margin over the basal joint of the antennæ rather raised and swollen, with a slight depression behind it. Antennæ pale testaceous, with the club darker, the basal article swollen. Thorax transverse, slightly convex, somewhat flattened on the disk, emarginate in front, narrower in front than behind; sides expanded and with a large reflexed margin, somewhat narrowed towards the base, but so little as to be almost straight for the posterior two-thirds of their length; for the anterior third they are gently rounded and declinate to the anterior angles, which are rounded; posterior angles nearly right-angled; base bisinuate; thickly and rugosely but not deeply punctate, rather closely clothed with

brown pubescence, which is directed on each side backwards and inwards to the mesial line; testaceo-piceous, paler and translucent towards the margins. Scutellum rounded, thickly punctate, and pubescent. Elytra scarcely broader and nearly a half longer than the thorax, flat, not so opaque, slightly shining, somewhat depressed towards the suture, costate, and with pubescence running along the costæ; the interstices rather broad and punctate, with transverse impressions; sides nearly parallel, with a deeply canaliculated reflexed margin, apex truncate, exterior apical angles a little rounded; piceous brown, with the shoulders and sides paler. Abdomen slightly shining, the margins raised, and fimbriæ prominent, finely but not closely punctate, slightly pubescent, fuscous, darkest in the middle, and with the sides testaceo-piceous. Underside paler. Legs pale testaceous.

Found by Mr. Wallace in rotten Kanary-fruit in the island of Batchian.

## 25. BRACHYPEPLUS APICALIS.

Elongatus, oblongo-ovatus, subopacus, subdepressus, leviter punctatus, testaceo pubescens, læte rufo-testaceus; elytris costatis et striato-punctatis, apice late nigro; abdomine pygidio coarctato, apice subacuto, medio fuscescente et segmento penultimo fusco notato. Long. 2 lin., lat.  $\frac{2}{3}$  lin.

Fig. 69.



Habitat in Mysol.

Elongate, oblong-ovate, subopaque and subdepressed, faintly but closely punctate, clothed with testaceous pubescence, clear rufo-testaceous. Head thickly punctate, with a slight transverse depression at the base of the epistome. Thorax transverse, slightly convex, with the sides very little rounded and very slightly expanded, a little narrower in front than behind; apex emarginate; base truncate, straight; anterior angles obtusely rounded, posterior angles nearly right-angled, but slightly obtuse; punctate, the punctures rugose and somewhat variolose, the pubescence rather long, loose, and soft. Scutellum with the apex rounded, slightly punctate and pubescent. Elytra nearly a half longer than the thorax, about the breadth of the thorax, slightly costate and pubescent, the costæ a little bent, being rather nearer the suture in the middle than at either the base or apex, the interstices transversely punctate; sides subparallel, declinate, margined and rather widely canaliculated; humeral angles gently and little rounded; apex truncate, exterior apical angles greatly rounded, sutural angles right-angled; the apex for more than a third and less than a half of the length of the elytra black, the black portion not reaching quite so far forward on the outer margins. Abdomen conical, the pygidium ending in a projecting blade at the apex, the dorsal part extending further than the ventral; the fimbriæ of the penultimate and antepenultimate segments slightly sinuate on the inner side, extending across the anterior margin of the segments, with an elevated papilla or thickened edging (behind which are the stigmata) at about a third from the front: the fimbriæ of the pygidium are sinuate on the inner side and widest in front; there is a longitudinal brown mark on the pygidium, widest behind, and a somewhat square fuscous mark in the middle of the penultimate segment.

Collected by Mr. Wallace in the island of Mysol, north of Ceram.

## 26. BRACHYPEPLUS CAUDALIS.

*B. apicali* valde affinis; prothorace paulo magis transverso, minus convexo, lateribus versus angulos posticos magis explanatis; læte flavus, capite saturatiore; elytris totis nigris, basi et regione scutellari exceptis; cæteris ut in *B. apicali*. Long.  $1\frac{3}{5}$  lin., lat.  $\frac{2}{3}$  lin. Fig. 70.



Habitat in insula Batchian.

Very closely allied to *B. apicalis*. It has the thorax less convex and a little shorter and more transverse, the sides towards the posterior angles more explanate, the punctures deeper, and the pubescence less. Clear yellow, with the head a little darker, and the elytra wholly black, except a triangular space from behind the shoulders to the suture, reaching to about the middle of its length; the margin also is pale to the very apex. It is as if the black apex in *B. apicalis* had extended obliquely up towards the shoulder; the transverse punctuation in the interstices of the elytra is deeper than in that species. In other respects it corresponds with it, and is no doubt its representative in Batchian—the different islands of the Malayan Archipelago having often representatives or varieties of the species found in other islands.

Collected by Mr. Wallace in the island of Batchian.

(Subgenus LEOPEPLUS (λεῖος, smooth; πέπλος, robe).)

Corpus depressum, elongatum, nitidum, haud vel vix pubescens. Thorax marginibus haud ciliatis. Ligula lobis curtis, sat densis. Abdomen postice haud cuneatum.

Body depressed, elongate, scarcely, if at all, pubescent, shining, and of a harder texture than most of the other species. Thorax not ciliated on the sides. Ligula with the lobes expanded somewhat similarly to those of *Carpophilus*, rather thick, and densely ciliated all over the surface. Scutellum transverse, triangular or pentangular (see fig. 73). Abdomen not wedge-shaped behind. Fimbriæ rather broad, sinuate on the pygidium, widest behind on the other segments, with a raised tubercle (behind which the stigmata lie) in the hollow of their curve.

## 27. BRACHYPEPLUS RUBIDUS. (Plate XXXIV. fig. 6.)

Murray, in Ann. Nat. Hist. iv. 356 (1859).

Elongatus, sat latus, depressus, planus, nitidus, punctatus, læte rufo-ferrugineus, capite elytrorumque apice nigris; elytris rugose punctato-striatis, striis haud apicem et marginem attingentibus, interstitiis leviter, apice et margine dense et rugose punctatis. Long.  $3\frac{1}{2}$  lin., lat. 1 lin. Fig. 71.



Habitat in Calabria antiqua in Africa occidentali.

Elongate, rather broad, flat, depressed, shining, bright rufo-ferruginous, with the head, the apex of the elytra, and the tip of the pygidium black; punctate; elytra punctate-striate. Head thickly and finely punctate, bi-impressed in front, leaving the epistome like a nasal ridge in the middle, and on the outer side of the impressions another raised space on each side. Mandibles and maxillæ ferruginous. Thorax transverse;

sides rounded and margined, broadly explanate at the posterior angles; apex not margined, emarginate, about as broad in front as behind; widest before the middle, anterior angles somewhat obtuse and rounded, posterior angles sharp, right-angled, scarcely looking backwards; base truncate and bisinuate, the middle projecting slightly like a truncate lobe, a faint longitudinal impression on each of its sides; the disk flat and of a subcordate form, truncate both before and behind; finely punctate, more sparingly on the centre than towards the sides. Scutellum transverse, pentangular, angles (except basal angles) rounded, punctate along the base. Elytra slightly wider behind than in front, rather coarsely punctate-striate, the striae disappearing towards the sides and apex, the punctuation in the striae transverse, interstices very finely and sparingly punctate; sides declinate and broadly margined, the black at the apex reaching about halfway up the elytra and gradually disappearing. Abdomen very faintly pubescent, the pygidium finely punctate, the preceding segments only punctate in front; fimbriae well marked, wider behind than in front, except on the pygidium. Legs rather stout, rufous.

From Old Calabar. Sent by my valued friend the Rev. W. C. Thomson, from whom I have received a multitude of treasures from his missionary station in that country.

There is also a specimen, from Portuguese Senegal, in the Marquis de la Ferté's collection.

#### 28. BRACHYPEPLUS NIGER.

Murray, in Ann. Nat. Hist. iv. 357 (1859).

*B. rubido* valde affinis; niger, major, et fortius punctatus. Long. 4 lin., lat.  $1\frac{1}{8}$  lin.

Habitat in Calabaria antiqua in Africa occidentali.]

Closely allied to *B. rubidus*; black, larger, and much more coarsely but still finely punctate; all the characters are somewhat exaggerated, but it does not seem to differ in other respects.

From Old Calabar.

#### 29. BRACHYPEPLUS LAFERTEI.

*B. nigro* similis: niger, levissime punctatus; prothorace angulis posticis retroaspiantibus; elytris levissime seriatim punctatis, vitta rufa humerali. Long. 3 lin., lat.  $1\frac{1}{8}$  lin.

Fig. 72.

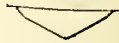


Habitat in Senegalia Lusitanica.

Similar in form to *B. rubidus* and *B. niger*. Oblong, parallel, very flat and depressed, shining, very faintly punctate. Black, with a red humeral vitta behind the shoulder reaching halfway down the elytra. Antennae testaceous, club fuscous. Head sparingly punctate, with a deep impression on each side in front. Thorax differently shaped from that of the above species, narrower in front than behind instead of being nearly equal, and the widest part is behind the middle towards the posterior angles, instead of being before the middle, the sides gently rounded, anterior angles rounded, posterior angles rounded, projecting a little backwards; base trisinate, one curve in front of the

scutellum and one on each side; the sides margined with a narrow explanate portion, wider a little before the posterior angle and with a depression at the base within the posterior angle; the disk flat, and of a semilunate form in front; very finely, almost invisibly, punctate, except on the declinate sides, on which the punctuation is more perceptible. Scutellum (fig. 73) transversely subtriangular, depressed at the apex, nearly impunctate. Elytra flat, sides declinate, straight from the shoulder, slightly rounded and with a strong margin, depressed at the suture, apex gently rounded both at sutural and exterior angles; punctate in rows (eight or nine), becoming occasionally punctate-striate, the interstices with a faint row of punctures irregularly placed. Abdomen scarcely punctate in the middle, more distinctly on the sides; fimbriæ rather broad, with a less marked raised point than in its allies, and a large deep fovea on the dorsal segment near the fimbrial suture; on the ventral side with similar large deep foveæ corresponding to those on the upper side of the abdomen, more punctate (somewhat faintly rugosely) on the underside of the abdomen; prothorax and metathorax shining and impunctate in the middle. Legs piceous.

Fig. 73.



From Portuguese Senegal. In the collection of the Marquis de la Ferté.

(Subgenus *LIPAROEPLUS* (λιπαρόες, obese; πέπλος, robe).)

Corpus convexum, haud pubescens. Thorax marginibus haud ciliatis. Labrum emarginatum. Ligula lobis brevibus. Abdomen convexum, haud postice cuneatum; segmentis omnibus (pygidio excepto) longitudine fere æqualibus.

Body convex, not pubescent. Thorax with the sides not ciliated. Labrum transverse, emarginate. Ligula with the lobes very short and little developed. Scutellum transverse, not quadrate. Abdomen convex, not wedge-shaped behind; all the segments nearly equal in length, except the pygidium, which is longest.

\* Much punctate and not very shining.

### 30. *BRACHYPEPLUS CONVEXUS*.

Elongatus, angustus, convexus, nitidus, punctatus, parcissime et levissime breviter testaceo pubescens, nigro-piceus; elytris saturatoribus, subcostatis, costis leviter seriatim punctatis, interstitiis fortiter striato-punctatis; pedibus ferrugineis. Long.  $1\frac{2}{3}$  lin., lat.  $\frac{9}{16}$  lin.

Fig. 74.



Habitat in Bahia.

Elongate, narrow, convex, shining, punctate, with a few scattered short testaceous hairs; nigro-piceous, with the elytra darker. Head thickly and deeply punctate, with a fovea on each side of the epistome, which is marked off behind by a semicircular line. Thorax subquadrate, broader than long, convex, with the sides much declinate, rounded, margined, all the angles rounded, the base margined and slightly bisinuate, strongly and thickly punctate, the punctures pitted, round, shallow, and raised in the middle. Scutellum transverse, pentagonal, the lateral angles rounded. Elytra parallel, rather longer than the thorax, the sides declinate and emarginate, with small but rather prominent shoulders, the apex obliquely truncate and the external apical angles rounded; deeply punctate-

striate, the punctures roundish, the interstices with a faint interrupted line or row of light punctures, which are oblong or quadrangular, these interstices appearing as costæ between the striæ. Abdomen above somewhat convex, very faintly punctate (punctures shallow and pitted), the fimbriæ rather raised. Below chestnut-coloured. Legs ferruginous.

From Bahia.

\*\* Smooth and very shining.

### 31. BRACHYPEPLUS COLASTOIDES.

Convexus, elongatus, subparallelus, oblongo-ovatus, nitidus, subtiliter punctatus; supra capite, prothorace et elytris nigerrimis, cæteris læte rufis, subtus (thoracis lateribus exceptis) læte rufus; elytris subtiliter punctato-striatis, interstitiis subtiliter seriatim punctatis, interdum fere punctato-striatis. Long.  $2-2\frac{1}{4}$  lin., lat.  $\frac{3}{4}$  lin.

Habitat in Calabria antiqua in Africa occidentali.

Convex, elongate, subparallel, oblong-ovate, finely and not closely punctate; texture hard and shining. Above with the head, thorax, and elytra intense (almost blue-) black; the abdomen and underside bright rufous, except the sides of the thorax. Head very shining, faintly punctate, the punctures only visible with a strong glass; a deep semi-lunate impression behind the epistome, the convex side in front. Labrum short, broad, transverse, and slightly emarginate, rufous; mouth rufous. Antennæ rufous, except the club, which is fuscous. Thorax convex, broader than long, subquadrate, emarginate in front, widest a little before the middle, most faintly punctate, a little more perceptibly so at the sides, which are rounded, scarcely margined, very narrowly edged; anterior angles rounded, posterior obtusely rounded; base sinuate. Scutellum scarcely punctate, pentangular, the angles rounded except at the base, with an impression on each side of the apex. Elytra twice as long as the thorax, slightly punctate-striate, with the interstices bearing a still finer row of punctures, which are occasionally united into a punctate stria, the striæ scarcely reaching to the apex; each elytron rounded at the apex; sides declinate, slightly inflexed, and faintly margined. Abdomen rufous, convex, very finely punctate, a little more punctate towards the sides; fimbriæ not wide nor much curved, nearly parallel, depressed at the junction of the segments. Underside rufous, shining, and most faintly and partially punctate. Legs ferrugineo-rufous. The female is a little more parallel in form than the male.

From Old Calabar.

The number of subgenera into which I have divided this genus renders a dichotomous Table of the species of less importance; but, to save the worker as much time as possible, I have added one.

#### *Dichotomous Table of Species of Brachypeplus.*

Abdomen with the first two segments considerably shorter than the rest . . . . .	1
Abdomen with the first two segments very little shorter than the rest . . . . .	29
1 { Margins of thorax ciliated . . . . .	2
1 { Margins of thorax not ciliated . . . . .	8

2	{ Convex, and with the first article of antennæ largely developed . . . . .	<i>auritus.</i>
	{ Depressed and elongate, with the first article of antennæ only moderately developed . . . . .	3
3	{ Base of elytra broadly marked with rufous . . . . .	4
	{ Base of elytra not broadly marked with rufous . . . . .	6
4	{ Rufous marking on base of elytra triangular, and extending (although more faintly) over the scutellar region on both elytra . . . . .	<i>basalis.</i>
	{ Rufous marking on base of elytra transverse, subquadrangular, and interrupted at the suture . . . . .	5
5	{ Abdomen piceous, the margins only of the segments rufescent . . . . .	<i>binotatus.</i>
	{ Abdomen with the antepenultimate segment and middle of penultimate segment rufous . . . . .	<i>blandus.</i>
6	{ Base of elytra narrowly and indistinctly margined with rufous . . . . .	<i>MacLeayii.</i>
	{ Elytra wholly black . . . . .	7
7	{ Antennæ and legs dark piceous . . . . .	<i>planus.</i>
	{ Antennæ and legs ferrugineo-piceous . . . . .	<i>castaneipes.</i>
8	{ Distinctly pubescent . . . . .	9
	{ Not at all or very slightly pubescent . . . . .	27
9	{ Mandibles with the apex cuspidate. Abdomen rapidly attenuated behind . . . . .	10
	{ Mandibles pointed. Abdomen not rapidly attenuated behind . . . . .	12
10	{ Elytra piceous brown, with the sides and shoulders paler . . . . .	<i>cuneatus.</i>
	{ Elytra rufo- or flavo-testaceous, with the apex black . . . . .	11
11	{ Apex of elytra transversely black . . . . .	<i>apicalis.</i>
	{ Apex of elytra obliquely black . . . . .	<i>caudalis.</i>
12	{ Scutellum with sides starting nearly at right angles from the base . . . . .	13
	{ Scutellum with sides more or less sloping inwards from the base . . . . .	21
13	{ Body above wholly black . . . . .	14
	{ Body above not wholly black . . . . .	18
14	{ Punctuation variolose . . . . .	<i>Caffer.</i>
	{ Punctuation not variolose . . . . .	15
15	{ Thorax distinctly narrower in front . . . . .	<i>depressus.</i>
	{ Thorax scarcely or not narrower in front . . . . .	16
16	{ Thorax widest in the middle and equally narrow both before and behind . . . . .	<i>prolixus.</i>
	{ Thorax widest before the middle . . . . .	17
17	{ Very small, only $1\frac{1}{2}$ line in length . . . . .	<i>tenuis.</i>
	{ Not unusually small, $2\frac{1}{2}$ lines in length . . . . .	<i>parallelus.</i>
18	{ Thorax lighter in colour than the elytra . . . . .	<i>anceps.</i>
	{ Thorax not lighter in colour than the elytra . . . . .	19
19	{ Thorax black. Elytra slightly paler at base and suture . . . . .	<i>Deyrollei.</i>
	{ Thorax ferrugineo-piceous . . . . .	20
20	{ Elytra paler at the base, and clothed there with lighter pubescence . . . . .	<i>mutilatus.</i>
	{ Elytra uniform ferrugineo-piceous throughout . . . . .	<i>pilosellus.</i>
21	{ Body not very broad. Scutellum rounded or transversely pentagonal . . . . .	22
	{ Body broad. Scutellum quadrangular or nearly so . . . . .	26
22	{ Body above wholly black. Scutellum elongate, triangular . . . . .	<i>Wallacei.</i>
	{ Body above not wholly black. Scutellum with the apex rounded . . . . .	23
23	{ Elytra enclosed with a narrow dark margin . . . . .	24
	{ Elytra not enclosed with a dark margin . . . . .	25

24	{ Elytra wholly lurid testaceous within the margin . . . . .	<i>omalinus</i> .
	{ Elytra with only the apical half pale . . . . .	<i>notatus</i> .
25	{ Thorax a little darker than the elytra . . . . .	<i>orientalis</i> .
	{ Thorax of same hue as elytra . . . . .	<i>patruelis</i> .
26	{ Wholly black . . . . .	<i>latus</i> .
	{ Elytra with the disk red . . . . .	<i>Loweii</i> .
27	{ Thorax rufous . . . . .	<i>rubidus</i> .
	{ More or less black . . . . .	28
28	{ Wholly black . . . . .	<i>niger</i> .
	{ Black, with a red patch on the elytra . . . . .	<i>Lafertei</i> .
29	{ Much punctate and only slightly shining . . . . .	<i>convexus</i> .
	{ Slightly punctate and very shining . . . . .	<i>Colastoides</i> .

Genus GRAMMOPHORUS (*γραμμή*, a line; *φορὰς* bearer: referring to the raised lines on the thorax).

Corpus subdepressum, parum pubescens, sat nitidum. Caput latum, mandibula sinistra apice bifida, dextra acutissima. Antennæ quam in *Brachypeplidis* cæteris longiores, pilosæ, clava oblongo-ovata. Prothorax transverso-quadratus, marginibus lateribus breviter ciliatis, disco lineis elevatis lævibus instructus. Scutellum magnum, acute triquetrum. Elytra segmenti abdominalis tertii basin obtegentia. Abdominis segmenta duo prima abbreviata. Tibiæ anticæ armatæ, posteriores margine externo spinulosæ.

Body subdepressed, slightly pubescent, rather shining. Head broad; mandibles on the left side with the apex bifid, on the right side with the apex very acute. Antennæ longer than in the allied species of *Brachypeplus*, pilose, and with the club oblong-ovate. Prothorax transversely quadrate, with the sides shortly ciliated along the margin, and bearing some smooth raised lines on the disk. Scutellum large, sharply triquetral. Elytra covering the base of the third abdominal segment. Abdomen with the first two segments short. Anterior tibiæ armed; the posterior spinulose on the posterior exterior margin.

I owe the description of this genus and species to my friend Professor Gerstäcker, of the University of Berlin.

GRAMMOPHORUS CÆLATUS (Mus. Berol.).

Breviusculus, fere parallelus, subdepressus, nitidulus, parce flavescenti-sericeus, rufo-ferrugineus, capite, antennarum basi elytrorumque dimidio apicali piceis; capite prothoraceque fortiter punctatis, hoc lineis quatuor discalibus lævibus instructo; elytris regulariter punctato-striatis, striis subsulcatis, interstitiis uniseriatim punctatis. Long.  $1\frac{1}{3}$  lin., lat. vix  $\frac{1}{2}$  lin.

Habitat in Columbia.

Rather short, almost parallel, subdepressed, somewhat shining, sparingly clothed with a silky flavescent pubescence, rufo-ferruginous, the head, the base of the antennæ, and the apical half of the elytra piceous. The head rufo-piceous, strongly but sparsely punctate, behind deeply constricted, smooth behind the stricture; the mandibles rufous.

Antennæ rather long, piceous except at the base, beset with stiff flavescent hairs; the club rather large, clothed with a flavescent silky pubescence. Prothorax a half broader than long, slightly narrower in front, with the sides very gently rounded, the anterior angles somewhat obtuse, the posterior almost right-angled; above strongly punctate, with four longitudinal callose raised parallel lines upon the disk, disappearing towards the apex. Scutellum transversely triquetral, with the apex acute, strongly punctate. Elytra a half longer than the thorax, piceous behind, regularly punctate-striate, with the striæ subsulcate, and with yellow hairs in the punctures, the interstices feebly punctate in single rows. Abdomen with the last three segments rufo-ferruginous above, very little shining, almost opaque, sparsely and faintly punctate. Body below subcoriaceous, bright ferruginous, with the metasternum obsoletely but thickly punctate on each side. Legs bright ferruginous.

From Columbia, where it was collected by M. Moritz. Unique in the Berlin Museum.

Genus *ADOCIMUS* (ἀδόκιμος, adulterine).

Caput sulcis antennariis. Labrum integrum. Oculi mediocres, fere capitis basin attingentes. Thorax angulis posticis rotundatis. Elytra striata vel seriatim punctata. Abdomen supra segmentis tribus expositis, segmentis primis duobus brevissimis, reliquis longioribus; maribus? segmentulo anali ventrali auctum; fimbriis lateribus parvis, sed marginibus anticis segmentorum singulorum lata fimbria instructis. Pedes omnes coxis distantibus, intermediis magis distantibus.

Body elongate, oblong, parallel, and depressed. Head moderate; eyes moderate, and reaching nearly, but not quite, to the base of the head. Epistome projecting. Antennæ short, stout, of an elongate club shape; first article rather swollen; second not so large, obovate; third smaller; fourth longer; fifth, sixth, and seventh short and broad; eighth lenticular; ninth long and broad; tenth shorter, but as broad; eleventh rounded; club nearly half the length of the whole antenna. Antennal grooves short, distinct, slightly converging. Labrum simple, scarcely rounded. Mandibles with the outer profile slightly sinuate before the point, the point with two or three minute denticulations on the inner side, and behind these a not very wide fringe of hairs. Maxillæ rather short, flat, and stout, with an abundant brush of hairs at the termination and on the inner side. Maxillary palpi shorter than the maxillæ, the third article largest and much dilated on the outer side, the terminal article cylindric-conical. Ligula corneous, short and broad, of an inverted pyramid shape, broadest in front, the apex truncate, and apical angles slightly rounded, a tuft of hairs projecting at each. Labial palpi short, the second article dilated on the outside, the terminal short, cylindric-conical. Mentum biemarginate, the middle truncate, with a slight emargination. Prothorax about the breadth of the elytra, transverse, with the posterior angles broadly rounded; margins thick and rounded-in towards the underside. Scutellum broad, pentagonal. Elytra with the base straight and shoulders square, striate, apex truncate, and exterior apical angles rounded. Abdomen with the second segment shortest, first next shortest, third and fourth nearly equal, and pygidium a little longer. Fimbriæ very small behind, widening in front, and extending in a raised band quite across, both above and below; a deep stigmatic depression lies on each side. The margins of the segments and of the fimbriæ are rounded and thickened.

Legs short and rather stout. Tibiæ with the apex truncate somewhat obliquely outwards, but much less so than in the *Brachypepli*, and the channel for the reception of the tarsi slight. Tarsi short, and last article short. Claws simple.

*Position and Affinities.*—BRACHYPEPLUS. ADOCIMUS. CILLÆUS.  
ORTHOGRAMMA.

ADOCIMUS BELLUS. (Plate XXXVI. fig. 5.)

Elongatus, oblongus, parallelus, depressus, planus, nitidus, glaber, aurantiaco-flavus, elytris nigris. Long.  $3\frac{1}{2}$  lin., lat.  $\frac{7}{8}$  lin.

Habitat in insula Mysol prope Ceram.

Elongate, oblong, parallel, depressed, flat, shining, glabrous, bright orange-yellow, with the elytra black, except a narrow edging round the scutellum. Head smooth and impunctate. Club of the antennæ fuscous. Thorax transverse, broader than long, very flat, smooth, and impunctate, the sides and posterior angles rounded, the anterior angles apparently rounded, but declinate near the point, and actually right-angled. Scutellum rather broad, impunctate, pentangular, the apical angle and angles next it rounded. Elytra clear black, with a narrow shade of yellow next the scutellum; smooth, with four or five faint impunctate lines within the shoulder, inclined obliquely inwards from the base; beyond these impunctate oblique lines there are three or four faint rows of punctures, becoming less oblique towards the apex, which is truncate, straight, with the exterior angles rounded; base straight and shoulders square. Abdomen above with the fimbriæ very marked, the dorsal ring rounded, thickened on the margins, and extending rather broadly across the base of each segment; the segments themselves prominent, slightly punctate, more so towards the sides, and with their edges thick and rounded, and with a deep stigmatic depression on each side; below with a similar fold or ring, and fimbriæ and stigmatic depression.

From the island of Mysol, near Ceram. Collected by Mr. Wallace. A single specimen is in the British Museum.

#### Genus CILLÆUS.

Laporte, Etud. Ent. p. 133 (1835).

Erichs. in Germ. Zeitschr. iv. 247 (1843).

Lacordaire, Histoire des Insectes, Coléoptères, ii. 297 (1843).

Caput sulcis antennariis. Labrum integrum. Oculi parvi, haud basin capitis attingentes. Elytra striata vel seriatim punctata. Abdomen elongatum, supra segmentis tribus expositis, segmentis primis duobus brevissimis, reliquis longioribus; maribus? segmentulo anali ventrali auctum; fimbriis subparallelis et antecedentibus angustioribus. Pedes intermedi coxis distantibus.

Body long, flat, and depressed, much like a *Brachypeplus*. The head is large, and broader in the males; and in most of the species the epistome is slightly porrect, although in some it is not. The eyes are projecting, small, and not reaching to the base of the head. Antennal grooves short, converging, well marked. Antennæ not much longer than the head; the first article oval, thicker than the rest; the second cylindrical, somewhat

longer than the third, the fourth to the eighth inclusive gradually becoming longer and thicker, and the ninth to the eleventh forming a compressed oval club. Labrum rounded in front. Mandibles short, strong, thick at the back, curved, bicuspid at the point, and in some species subserrated behind. Lobe of the maxillæ small, strongly bearded on its inner side, and in some species (*C. castaneus* and *C. megacephalus*, which should, perhaps, form a different genus) with a curved tooth behind. Maxillary palpi with the first article small, second large, third smaller, and last elongate and as large as the two preceding united. Labial palpi short, with the first joint small, second a little longer and usually thicker than the last, which is somewhat oval. Ligula oval, keeled, with coriaceous paraglossæ ciliated on their inner side; in some species with short, rounded, membranous lobes. Mentum transverse, varying in form in the different species. Prothorax a little longer than broad, and slightly narrowed behind. Scutellum large, transverse, subtriangular. Elytra truncate, leaving the last three abdominal segments exposed. Legs short and robust, thighs slightly canaliculated below for the reception of the tibiæ; posterior tibiæ furnished with small spines on their external margin, and no channel for the reception of the tarsi, which are feeble—their first three articles very short, dilated, and furnished with long hairs below, the fourth minute, the last long, and with the claws simple. Prosternum flat. Mesosternum broad, large, and flat, on the same level as the prosternum and mesosternum, merely divided from them by sutures. Middle coxæ more widely separated from each other than either the anterior or posterior. The first two abdominal segments very short, the rest longer; a small additional ventral anal segment in one sex, probably the males. Fimbriæ narrow, subparallel, with a very slight curve in front.

## BRACHYPEPLUS.

*Position and Affinities.*—ADOCIMUS. CILLÆUS. ITHYPHENES.

## ORTHOGRAMMA.

\* Inner side of maxillæ with a curved basal tooth.

## 1. CILLÆUS CASTANEUS. (Plate XXXV. fig. 2.)

Laporte, Etud. Ent. 133 (1835).

Læte dilute castaneus, leviter punctatus; thorace subquadrato; elytris longis, sat fortiter striato-punctatis, postice lævioribus, interstitiis leviter punctatis. Long. 4-5 lin., lat.  $\frac{5}{8}$ -1 $\frac{1}{8}$  lin.

Habitat in Madagascaria.



Elongate, flat, shining, finely punctate, pale chestnut-coloured. Head rather thickly and distinctly punctate, transversely depressed and bi-impressed in front. Labrum punctate, with a smooth line up the middle diverging in front. Thorax subquadrate, with all the angles rounded, sparsely and irregularly finely punctured, with a smooth longitudinal impunctate space in the middle; sides declinate and margined, posterior angles with an impression close to the angle. Scutellum transversely triangular, slightly rounded, impunctate, except very slightly along the sides. Elytra a half longer than the thorax, with the sides inflexed and the suture depressed; finely punctate-striate, the stria next the suture deeper and wider than the others, especially at the base; all the

striae effaced before reaching the apex, which is pretty thickly finely punctate; the interstices for the most part impunctate, but some with a few straggling, almost imperceptible irregular punctures; exterior apical angles rounded, sutural angles right-angled. Abdomen more finely and closely punctate than the rest of the body, with large depressions on each side of the last three segments both above and below; dorsal exposed portion of the abdomen about the length of the elytra. Underside finely punctate and slightly pubescent. Legs punctate.

From Madagascar.

## 2. CILLÆUS MEGACEPHALUS.

Laporte, Etud. Ent. 134 (1835).

*Ips terminata* (Dej. Cat. 134, ed. 1837).

Læte dilute castaneus, elytris apice tenuiter nigris vel fuscis; capite lato, thorace antice latiore; maribus capite et thorace latoribus. Long. 5 lin., lat.  $1\frac{1}{8}$  lin.

Fig. 76.



Habitat in Madagascar.

Very nearly allied to *C. castaneus*. It is, however, larger and throughout rather more coarsely punctate. The labrum is different—larger, more prominent, and prolonged instead of transverse, and is dull and more punctate; it has only a trace of the longitudinal smooth line diverging in front which we find in *C. castaneus*. The mandibles are larger, stronger, and more strongly toothed at the tip. The head is much broader in front and more deeply punctate. The thorax is differently shaped: instead of being subquadrate it is subcordate, broadest in front, and the posterior angles more obtuse and reflexed. The scutellum is a little more punctate. The apex of the elytra has a narrow black margin. The head and thorax are very much enlarged and widened in the males. In other respects it is the same as *C. castaneus*.

From Madagascar.

\*\* Inner side of maxillæ without a basal tooth.

## 3. CILLÆUS OBSCURUS. (Plate XXXV. fig. 3.)

Laporte, Etud. Ent. 134 (1835).

*Ips obscurella* (Dej. Cat. 134, ed. 1837).

Nigro-piceus, subpubescens, leviter et sparsim punctatus; thorace antice parum latiore; elytris thorace longioribus, striato-punctatis; abdomine pubescente, segmentis postice rufo-translucentibus; subtus piceus, palpis, antennarum basi pedibusque piceis vel testaceo-piceis. Long. 3 lin., lat.  $\frac{3}{4}$  lin.

Fig. 77.



Habitat in Madagascar.

Elongate, narrow, slightly punctate and finely pubescent, nigro-piceous. Head, thorax, and scutellum somewhat shining, elytra and abdomen subopaque, the margins subciliated. Head broad, finely punctate, with the epistome marked off by a semicircular line. Labrum small, rather projecting, flat, opaque, punctate. Thorax broadest in front, bisinuate in front, scarcely sinuate behind, depressed on the sides and at the posterior

angles. Scutellum triangular, very slightly punctate. Elytra longer than the thorax, faintly punctate-striate, with a tendency to become costate, some of the alternate interstices being slightly raised; the striae effaced before the apex; apex slightly rounded, with the external angles rounded, sutural angles slightly obtuse. Abdomen pubescent and finely punctate, with a longitudinal impression on the last three segments both above and below, but not so deep below; dorsal exposed portion of abdomen about a third of the length of the thorax longer than the elytra; margins of segments ferruginous-piceous. Underside finely and closely punctate and pubescent. Legs short and stout, dark ferruginous-piceous.

From Madagascar.

4. *CILLÆUS LINEARIS*. (Plate XXXV. fig. 4.)

Erichs. in Germ. Zeitschr. iv. 249 (1843).

Glaber, dilute testaceus, nitidus, subtiliter punctatus; thorace oblongo; elytris thorace fere duplo longioribus, colore saturationibus. Long. 3 lin., lat.  $\frac{1}{2}$  lin.

Habitat in Columbia.

Linear, depressed, glabrous, shining, clear pale testaceous. Mandibles black. Head a little narrower than the thorax, with the forehead flat, faintly punctate. Thorax about the breadth of the elytra, rather longer than broad, somewhat oblong, slightly narrowed towards the base, depressed, faintly punctate. Scutellum very faintly punctate. Elytra about twice as long as the thorax, faintly irregularly punctate, not striate, darker than the rest of the body. Abdomen more thickly punctate, the dorsal segments marked longitudinally with fuscous, the dorsal exposed portion of the abdomen about equal in length to the thorax and elytra taken together.

From Columbia.

5. *CILLÆUS LONGIPENNIS*.

Longus, linearis, angustus, parallelus, depressus, testaceo-castaneus, griseo pubescens, punctatus, subopacus; thorace latitudine longiore; elytris thorace fere duplo longioribus, levissime lineatis, interstitiis seriatim elongato-punctatis; abdomine aciculatim granulato et punctato. Long.  $2\frac{3}{4}$  lin., lat.  $\frac{2}{5}$  lin. Fig. 78.



Habitat in Madagascaria.

Long, linear, narrow, parallel, depressed, testaceous chestnut, dull, grisco-pubescent, punctate, subopaque. Head moderately punctate. Labrum transverse, short, indented on the margin. Thorax with the sides nearly parallel, very slightly narrowed in front and behind, irregularly punctured, the punctures rather deep, scattered, and elongate; anterior angles obtuse and rounded, posterior angles nearly right-angled, sides margined. Scutellum not very large, picco-castaneous, punctate. Elytra nearly twice the length of the thorax, scarcely broader than the general width of the thorax, a little broader at the base than its base, very finely and closely lincate, the interstices impressed with a row of longitudinal punctures, in some places running together so as to make an inter-

rupted line; shoulders not prominent, rectangular, rounded, sides slightly margined; apex scarcely obliquely truncate, exterior apical angles rounded, sutural apical angles right-angled. Abdomen aciculary shagreened, with a scattered griseous stiff pubescence issuing from punctures (which seem as if made from behind forwards); the segments with a darker chestnut band near the margin, the margin itself thin, testaceous, and pubescent; dorsal exposed portion of the abdomen about two-thirds of the length of the thorax longer than the elytra. Underside with the breast piceo-testaceous. Legs testaceous.

This seems to come near Laporte's *C. filiformis* in size and form. It differs from his short description, however, in colour and some other points.

From Madagascar. A single specimen in the collection of the Marquis de la Ferté.

## 6. CILLÆUS VERMIS.

Parvus, linearis, elongatus, parallelus, depressus, piceo-testaceus, mollis, punctatus et valde pubescens; thorace paulo latitudine longiore; elytris pube lineatim vestitis, haud vel vix punctatis. Long.  $1\frac{7}{8}$  lin., lat.  $\frac{1}{3}$  lin. Fig. 79.



Habitat in Madagascaria.

Small, narrow, linear, elongate, slender, depressed, parallel, piceo-testaceous, punctate, and very pubescent. With a good lens the acicular chitinous texture may be seen on the thorax, but not so marked as on the abdomen of *C. longipennis*. Head darker, very pubescent. Thorax nearly quadrangular, sides parallel, almost as broad as long, scarcely perceptibly margined; angles nearly right-angled, the points rounded; very pubescent, with scattered, longish, shallow punctures. Scutellum not large. Elytra a little more than a half longer than the thorax, very pubescent, the pubescence lying in rows; punctures not perceptible; apex squarely truncate; exterior apical angles rounded, a little darker towards the apex. Abdomen with the dorsal exposed part half the length of the body, paler than the rest, more finely pubescent, and without punctures. Underside pale. Legs pale testaceous.

From Madagascar. A single specimen in the collection of the Marquis de la Ferté.

*Note.*—The three following species are described by Laporte as belonging to this genus; but as his descriptions are insufficient to identify them, and as it is even doubtful whether they really do belong to the genus as now defined (Laporte having supposed it to belong to the *Omalidæ*, a group of the *Staphylinidæ*), and as, moreover, I have no traditional knowledge of the species he had in view, I merely give a copy of his descriptions, leaving it to the reader to try and make them out for himself.

## 7. CILLÆUS SUTURALIS.

Laporte, Etud. Ent. 133 (1835).

“Niger, punctatus; elytris flavis, sutura apiceque nigris, leviter punctato-striatis; segmentis abdominis postice pedibusque testaceo-brunneis. Long. 2 lin., lat.  $\frac{1}{2}$  lin.

“Habitat in Madagascaria.”

Black, punctate, with the elytra yellow, the suture and the apex black, lightly punc-

tate-striate. Abdomen with the posterior margins of the segments and legs testaceo-brunneous.

From Madagascar.

#### 8. CILLÆUS THORACICUS.

Laporte, Etud. Ent. 134 (1835).

"Pubescens, punctatus, brunneo-rufus; thorace antice transversim paulo carinato; elytris longis, obscuris, leviter striato-punctatis; pedibus rufis. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{1}{3}$  lin.

"Habitat in Madagascaria."

Pubescent, punctate, brunneo-rufous; the thorax somewhat keeled transversely in front. Elytra long, obscure, lightly punctate-striate. Legs rufous.

From Madagascar.

#### 9. CILLÆUS FILIFORMIS.

Laporte, Etud. Ent. 134 (1835).

"Valde elongatus, linearis, punctatus, pubescens; capite et thorace rufescentibus; elytris longis, obscuris, pube brunnea vestitis; abdomine obscuro, segmentis crinibus flavis marginatis; antennis pedibusque rufis. Long.  $2\frac{3}{4}$  lin., lat.  $\frac{1}{3}$  lin.

"Habitat in Madagascaria."

Very much elongated, linear, punctate, pubescent, with the head and thorax reddish. Elytra long, obscure, covered with brown hairs. Abdomen obscure, with the margins of the segments bearing yellow hairs. Legs and antennæ red.

From Madagascar.

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Genus ITHYPHENES (*ἰθὺς*, obvious; *φένω*, I kill,—alluding to the projecting mandibles).

Corpus elongatum, valde depressum. Caput latum, epistomate porrecto et emarginato; oculis parvis, haud basin capitis attingentibus; sulcis antennariis brevibus. Labrum integrum. Maxillæ ad basin uncinatæ. Thorax subcordiformis. Elytra striata. Abdomen supra segmentis ultimis tribus expositis, segmentis omnibus fere æqualibus, secundo solum paulo minore.

Body elongate, flat, and much depressed\*. Head broad, with the sides rounded, and widest behind the eyes; epistome with a broad projection which is emarginate, and each side of the projection is emarginate also; eyes small, far forward, at the base of the mandibles, and not reaching near to the base of the head. Antennæ slender, rather long, and club small; first article large, and swollen in front, nearly as large as the club;

\* By far the greater number of the specimens of the species of this genus and *Orthogramma* which have come to Europe were collected by Mr. Wallace, and in almost every one of them the thorax appears hollowed and cup-shaped, the elytra curled-in longitudinally or sloped to the suture, and the abdomen longitudinally hollowed; nevertheless, as I find that this is not the case in one or two examples of the less rare species which I have received from other hands, but that they are merely flat, I am led to suppose that Mr. Wallace had obtained his specimens shortly after they had left the chrysalis and while still retaining marks of immaturity. Consequently I have assumed that these hollowed specimens would be flat in their normal condition, and have so treated them.

second to eighth articles slender, and nearly equal in thickness; second rather small and short, widest at the apex, not so long as the third, rather longer than the fourth; third of same form as second, but a little thinner and longer; fourth and fifth equal, shorter than second; sixth shorter and thinner; seventh a little thicker, but short; eighth the smallest of all the articles, making a slight interruption before the club; ninth to eleventh making a small, somewhat rounded club; ninth and tenth shallow, short, cup-shaped; and eleventh rounded. Antennal grooves converging. Labrum somewhat concealed by the epistome, small, narrow, sharply emarginate, or almost bidentate. Mandibles strong, projecting, deeper than broad, bicuspid at the apex, and with another tooth a little further back on the inner side. Maxillæ thin, hooked at the apex, with the inner side fringed with hairs, and at the base a curved tooth. Maxillary palpi about the length of the maxillæ, slender, the first article small, the second and third about equal, and the last article long and ovate. Ligula short, truncate in front, with a thin, slender, membranous lobe, like a small maxilla, ciliated on the inner side, projecting on each side of the front of the ligula. Labial palpi slender, the first article small, second longer, third as long as the second, a little thicker and more dilated on the exterior side. Mentum biemarginate. Prothorax somewhat cordiform, a little longer than the head, as broad as it in front, not half so broad at the base. Scutellum semicircular. Elytra feebly striate, longer than the thorax, wider than its base, square at the shoulders, rounded at the apex, especially on the exterior angles. Abdomen above with the last three segments and the margin of the fourth exposed; the sides not straight, each segment being rounded on the sides and narrower behind than before; fimbriæ of the penultimate and antepenultimate segments widest behind, and stretching across the segment in front; pygidium with the fimbriæ widest in front. Legs with the thighs large, flat, and broad. Tibiæ very short and rather stout, without a channel on the outside of the apex for the reception of the tarsi. Tarsi slender, except the basal article, which is large.

*Position and Affinities.*—CILLÆUS. ITHYPHENES. ORTHOGRAMMA.  
CUCUJUS.

ITHYPHENES GNATHO. (Plate XXXVI. fig. 2.)

Elongatus, valde depressus, nitidus, flavo-testaceus, capite antice picescente, elytris apice nigro; capite lato, impunctato, epistomate porrecto et leviter emarginato; thorace postice quam antice dimidio angustiore, elytris brevior et postice angustiore, impunctato; scutello transverso, semicirculari, impunctato; elytris pone medium latioribus, levissime substriatis, striis versus latera et apicem oblitteratis, versus apicem singulis foveolatis, apice oblique rotundato; abdomine segmentis utrinque punctulatis, medio impunctatis. Long.  $4\frac{1}{2}$  lin., lat.  $\frac{4}{5}$  lin.

Habitat in insula Saylu in Nova Guinea.

Elongate, very much depressed, shining, yellowish testaceous, with the front of the head and the mouth becoming piceous; the elytra with the apical two-thirds black. Antennæ piceo-rufous, with the club dusky. Mandibles nearly black. Head broad,

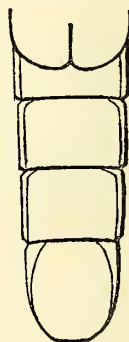
impunctate. Thorax in front as broad as the head, behind narrower than the elytra, a half narrower behind than before; apex truncate, base slightly rounded, anterior angles rounded, posterior obtusely rounded, sides gently curved, impunctate, with a faint dorsal line. Scutellum semicircular, transverse, impunctate. Elytra longer than the thorax, with the sides and the apex smooth and impunctate, bearing within the shoulders nearly effaced traces of eight or nine striae; a large fovea on each elytron near the apex just within a line drawn straight from the shoulders, which are square, sides gradually expanding until behind the middle, where they begin to turn in and gradually round-in to the suture; margin of the apex and sides rounded and inflexed. Abdomen with each segment narrowest at the base and rounded in the middle, so that the sides of the abdomen are not even, but a succession of curves; each segment impunctate in the middle, but bearing effaced punctures next the sides. Legs with the thighs and the tarsi pale, the knees and tibiae slightly darker.

From Saylu, one of the New Guinea Islands. Collected by Mr. Wallace. Unique in the British Museum.

Genus ORTHOGRAMMA (*ὀρθός*, straight; *γραμμή*, a line).

Corpus lineare, valde depressum. Caput elongatum; epistomate plus minusve porrecto, emarginato et denticulato; oculis parvis, haud prope basin capitis attingentibus; sulcis antennariis brevibus. Labrum integrum. Thorax elongatus, oblongus. Elytra striata. Abdomen supra quatuor segmentis ultimis expositis, segmentis omnibus fere æqualibus, secundo solum paulo minore.

Fig. 80.



Body linear, parallel, flat, and excessively depressed. Head oblong, parallel, about as long as the thorax. Epistome more or less projecting, and toothed or with one or more emarginations. Every species of the genus seems to have a differently formed epistome. Eyes small, far forward, and not reaching nearly to the base of the head. Antennæ rather stout; first article swollen and dilated externally, second shorter, but longer and stouter than the third, which is short, moniliform, and a very little longer than the following articles, fourth to seventh moniliform and equal, eighth a very little broader, ninth to eleventh forming a large oval club. Antennal grooves short, indistinct, and slightly converging. Labrum rounded in front. Mandibles with the outer margin thickened, capable of being bent downwards so as to be little seen from above, and with two or three teeth. Maxillæ of moderate size, with a brush of hair on the inner side. Maxillary palpi longer than the maxillæ, first article small, second a little longer than the third, the terminal article longest, cylindrico-ovate. Ligula corneous, short, and broad; apex of the paraglossæ seen projecting behind (Plate XXXV. fig. 5 e). Membranous wing or lobe short, broad, and curved. Labial palpi short, the second article largest, last article ovato-conical. Mentum bicornate; a prominent rounded tooth in the middle. Prothorax a little longer than the head, scarcely wider than its base, and about the breadth of the elytra, nearly oblong, not margined. Scutellum transverse. Elytra striate, not much longer than the thorax, with the exterior apical angles rounded and the apex truncate. Abdomen straight on the sides, with all the segments long and nearly equal, the second a

last a little the longest, and rounded; above with the last of the second exposed, the second of a duller and softer \*; all the exposed segments have a narrow fimbria along the the pygidium, and very slightly turned-in at the anterior ents. Legs very short; thighs flat and broad; tibiæ stout, outside of the apex for the reception of the tarsi; tarsi long article (claw-joint) as long as all the rest taken together; shorter in the males.

-ITHYPHENES. ORTHOGRAMMA. CILLÆUS.

ps. (Plate XXXVI. fig. 3.)

ata, subnitida et testaceo-flava; capite antice fus-  
pra fusco, elytris piceo-fuscis, basi piceo-testaceis;  
to, fortius antice, medio antice longitudinaliter im-  
entato; thorace antice quam postice latiore, ante  
dice convexo, punctato; elytris oblique subcarinato-lineatis,  
unctatis, postice oblitteratis; abdomine leviter punctato. Long.

Fig. 81.



Epistoma.

Elongate, parallel, punctate, somewhat shining, testaceous yellow, with the head fuscescent in front, the abdomen above fuscous, and the elytra piceo-fuscous, with the base paler or piceo-testaceous. Head not very flat; epistome with two projecting teeth (fig. 81), and extending backwards from between them there is a rather deep longitudinal punctate impression for about a third of the length of the head, more deeply punctate in front, more faintly behind. Antennæ piceo-testaceous, terminal article paler. Thorax nearly as broad as long, but narrower behind than in front, broadest a little before the middle, truncate straight in front, sides sloping in a gentle curve from before backwards, and declinate towards the front, posterior angles rounded, anterior nearly right-angled, the points of the angles rounded; distinctly punctate, somewhat convex, unequal on the surface as if portions had been slightly flattened, and with a slight mesial longitudinal impression. Scutellum triangular, broad, irregularly and sparsely punctate. Elytra about a half longer than the thorax, and about equally broad, with a few faint longitudinal ridges, between which is a double row of punctures obliquely directed from the base inwards, deepest towards the base, effaced towards the apex, which is smooth, the sutural row of punctures deepest and largest. Wings when expanded extending beyond the body. Abdomen faintly punctate, with a longitudinal impression. Underside testaceous yellow.

Collected by Mr. Wallace in the island of Dorcy in New Guinea. A single specimen is in the British Museum.

\* This softer texture shows that when alive the second segment, with the exception of its harder posterior margin, is covered by the elytra; but in all the specimens which I have seen a large portion of that segment has been visible from above.

Author: Murray, A.  
(Surname first)  
Title: Monogr. of Nitidulariæ. 1864.  
5 col. pl. 4to.

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Edition: Place: New York  
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Publisher: John D. Shorman, Jr.

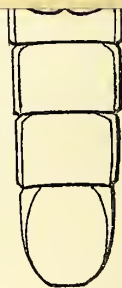
impunctate. Thorax in front as broad as the head, behind : half narrower behind than before ; apex truncate, base slightly rounded, posterior obtusely rounded, sides gently curved, impunctate. Scutellum semicircular, transverse, impunctate. Elytra with the sides and the apex smooth and impunctate, bearing effaced traces of eight or nine striæ ; a large fovea on each within a line drawn straight from the shoulders, which are expanding until behind the middle, where they begin to turn in the suture ; margin of the apex and sides rounded and inflexed, narrowest at the base and rounded in the middle, so that they are not even, but a succession of curves ; each segment impunctate bearing effaced punctures next the sides. Legs with the tibiae and knees and tibiæ slightly darker.

From Saylu, one of the New Guinea Islands. Collected by the British Museum.

Genus ORTHOGRAMMA (*ὀρθόγραμμα*, straight ; *γραμμή*, line)

Corpus lineare, valde depressum. Caput elongatum ; epistomate plus minus emarginato et denticulato ; oculis parvis, haud prope basin capitis. Labrum integrum. Thorax elongatus, elongatus. Elytra striata. Abdomen supra quatuor segmentis ultimis expositis, segmentis omnibus fere æqualibus, secundo solum paulo minore.

Body linear, parallel, flat, and excessively depressed. Head oblong, parallel, about as long as the thorax. Epistome more or less projecting, and toothed or with one or more emarginations. Every species of the genus seems to have a differently formed epistome. Eyes small, far forward, and not reaching nearly to the base of the head. Antennæ rather stout ; first article swollen and dilated externally, second shorter, but longer and stouter than the third, which is short, moniliform, and a very little longer than the following articles, fourth to seventh moniliform and equal, eighth a very little broader, ninth to eleventh forming a large oval club. Antennal grooves short, indistinct, and slightly converging. Labrum rounded in front. Mandibles with the outer margin thickened, capable of being bent downwards so as to be little seen from above, and with two or three teeth. Maxillæ of moderate size, with a brush of hair on the inner side. Maxillary palpi longer than the maxillæ, first article small, second a little longer than the third, the terminal article longest, cylindrico-ovate. Ligula corneous, short, and broad ; apex of the paraglossæ seen projecting behind (Plate XXXV. fig. 5 e). Membranous wing or lobe short, broad, and curved. Labial palpi short, the second article largest, last article ovato-conical. Mentum biemarginate ; a prominent rounded tooth in the middle. Prothorax a little longer than the head, scarcely wider than its base, and about the breadth of the elytra, nearly oblong, not margined. Scutellum transverse. Elytra striate, not much longer than the thorax, with the exterior apical angles rounded and the apex truncate. Abdomen straight on the sides, with all the segments long and nearly equal, the second a



little the shortest and the last a little the longest, and rounded; above with the last three segments and a part of the second exposed, the second of a duller and softer texture than the last three\*; all the exposed segments have a narrow fimbria along the margin, widest in front in the pygidium, and very slightly turned-in at the anterior margin of the other segments. Legs very short; thighs flat and broad; tibiæ stout, without a channel on the outside of the apex for the reception of the tarsi; tarsi long and slender, the terminal article (claw-joint) as long as all the rest taken together; anterior tarsi dilated and shorter in the males.

*Position and Affinities.*—ITHYPHENES. ORTHOGRAMMA. CILLÆUS.

1. ORTHOGRAMMA LONGICEPS. (Plate XXXVI. fig. 3.)

Elongata, parallela, punctata, subnitida et testaceo-flava; capite antice fuscescente, abdomine supra fusco, elytris piceo-fuscis, basi piceo-testaceis; capite distincte punctato, fortius antice, medio antice longitudinaliter impresso, epistomate bidentato; thorace antice quam postice latiore, ante medium latissimo, modice convexo, punctato; elytris oblique subcarinato-lineatis, interstitiis gemellato-punctatis, postice oblitteratis; abdomine leviter punctato. Long.  $4\frac{1}{3}$  lin., lat.  $\frac{3}{4}$  lin.

Fig. 81.



Epistoma.

Habitat in insula Dorey.

Elongate, parallel, punctate, somewhat shining, testaceous yellow, with the head fuscescent in front, the abdomen above fuscous, and the elytra piceo-fuscous, with the base paler or piceo-testaceous. Head not very flat; epistome with two projecting teeth (fig. 81), and extending backwards from between them there is a rather deep longitudinal punctate impression for about a third of the length of the head, more deeply punctate in front, more faintly behind. Antennæ piceo-testaceous, terminal article paler. Thorax nearly as broad as long, but narrower behind than in front, broadest a little before the middle, truncate straight in front, sides sloping in a gentle curve from before backwards, and declinate towards the front, posterior angles rounded, anterior nearly right-angled, the points of the angles rounded; distinctly punctate, somewhat convex, unequal on the surface as if portions had been slightly flattened, and with a slight mesial longitudinal impression. Scutellum triangular, broad, irregularly and sparsely punctate. Elytra about a half longer than the thorax, and about equally broad, with a few faint longitudinal ridges, between which is a double row of punctures obliquely directed from the base inwards, deepest towards the base, effaced towards the apex, which is smooth, the sutural row of punctures deepest and largest. Wings when expanded extending beyond the body. Abdomen faintly punctate, with a longitudinal impression. Underside testaceous yellow.

Collected by Mr. Wallace in the island of Dorcy in New Guinea. A single specimen is in the British Museum.

\* This softer texture shows that when alive the second segment, with the exception of its harder posterior margin, is covered by the elytra; but in all the specimens which I have seen a large portion of that segment has been visible from above.

## 2. ORTHOGRAMMA PUNCTICEPS.

Elongata, linearis, parallela, depressa et nitida, capite testacco-rufo, antice fuscescente, thorace testacco-rufo, scutello, elytris et abdomine nigro-piceis, pedibus piceis; capite antice declinante, excavato et fortiter punctato, postice et lateribus vix punctato, epistomate bidentato et lateribus biemarginato; thorace antice quam postice latiore, medio impunctato, circa medium leviter punctato; elytris punctato-striatis; abdomine medio lævi et impunctato, lateribus prope fimbriis sat fortiter punctatis. Long. 4 lin., lat.  $\frac{1}{2}$  lin.

Fig. 82.



Epistoma.

Habitat in Sarawak.

Elongate, linear, parallel, depressed, rather shining, the head and thorax testaceous-rufous, the former becoming fuscous in front, the mandibles nigro-piceous, and the antennæ rufo-piceous; the scutellum, elytra, and abdomen nigro-piceous; the scutellum and the margins of the segments of the abdomen with a rufescent tinge; the legs piceous. Head with the front part sloping towards the mouth, the slope depressed and deeply foveolated just behind the epistome, which has two projecting teeth (fig. 82) and is slightly biemarginate on each side; the sloping punctured portion is rounded on its sides, narrowest behind, and the posterior margin is truncate; the sides of the head are smooth, rather rounded, and impunctate, and the back smooth, with the exception of a slight oblique fovea on each side. The mandibles have one very large tooth behind the point. The thorax is narrower behind than in front, widest a little before the middle, both base and apex truncate, the disk smooth in the middle and surrounded with faint punctures, slightly longitudinally corrugated at the base; anterior angles slightly declinate and obtuse, posterior angles distinctly obtuse. Scutellum slightly and irregularly punctate along the base. Elytra punctate-striate, the striæ sloping from the base obliquely inwards and becoming effaced before reaching the apex; there are a few very long fine hairs projecting from the sides of the elytra. Abdomen above with the fourth segment dull, opaque, and impunctate, the remaining three smooth, impunctate, and shining in the middle; on each side next the fimbriæ deeply and irregularly punctate. Thighs very thick and stout, and tarsi very long and slender.

Collected by Mr. Wallace at Sarawak in Borneo. There is a specimen in the British Museum.

## 3. ORTHOGRAMMA FISSICEPS.

Elongata, linearis, depressa, nitida et testaceo-rufa, lateribus capitis et thoracis, scutello abdomineque piceo-fuscis, elytris nigris; capite antice linea profunda angustaque longitudinaliter medio impresso; thorace antice quam postice parum latiore; elytris leviter oblique striatis, lateribus apiceque impunctatis. Long.  $3\frac{7}{8}$  lin., lat.  $\frac{3}{5}$  lin.

Fig. 83.



Epistoma.

Habitat in insula Dorey.

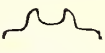
Elongate, linear, depressed, shining, testaceous-rufous, with the mouth and sides of the head and of the anterior portion of the thorax piceous, the scutellum and abdomen piceo-fuscous, the margins of the basal segments testaceous, the elytra black; legs piceous

black, tarsi testaceous. Head smooth, very faintly (almost imperceptibly) punctate in front, impunctate behind; epistome with two slight projections, somewhat bent down, and separated by a rather wide emargination (fig. 83), behind which extends, for nearly the half of the length of the head, a deep, longitudinal, irregularly, rather strongly punctate fovea. Thorax very faintly punctate, rather narrower behind than in front; sides gently curved, declinate towards the front, anterior angles nearly right-angled, posterior angles rounded; front truncate, straight; base truncate, but rounded towards the angles. Scutellum broad, nearly impunctate, longitudinally hollowed. Elytra with two or three fine, very faintly punctate striæ running obliquely inwards from the base within the shoulder, but becoming effaced towards the apex and sides, which are perfectly smooth; a few long, fine hairs ranged along the outer margin. Abdomen above with a longitudinal hollow along all the segments, which are smooth and impunctate, except the pygidium, which is faintly punctate, and all with a few scattered long hairs, more especially along the margins. Thighs very stout.

Collected by Mr. Wallace in the island of Dorey in New Guinea. A single specimen is in the British Museum.

#### 4. ORTHOGRAMMA FUSCIPENNIS. (Plate XXXV. fig. 5.)

Elongata, linearis, valde depressa et nitida, plus minusve punctata, capite et Fig. 84.

thorace piceo-ferrugineis, elytris abdomineque fusco-piceis, pedibus ferru-  Epistoma.  
gineis; epistomate porrecto et profunde emarginato; thorace capite haud  
multum longiore, leviter sparsim punctato, medio levissime lineato; elytris punc-  
tato-striatis, interstitiis lævibus; abdomine sparsim sat fortiter punctato et leviter  
pubescente. Long.  $2\frac{3}{4}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in Borneo.

Linear, elongate, very much depressed, shining, more or less punctate; head and thorax piceo-ferruginous; elytra and abdomen fusco-piceous. Head oblong, large, broad, flat, sides parallel, sparsely and finely punctate, most on the middle and scarcely or not at all on the sides; epistome bidentate and emarginate (fig. 84); antennæ ferruginous, with the club dusky; mandibles unequally tridentate, and with the outer side raised like a ledge (see Plate XXXV. fig. 5 g), ferruginous, with the tip darker. Thorax suboblong, with the apex and base about equal in breadth, not wider than the head, the sides gently rounded, widest a little behind the middle, the margin on the sides sinuate, broadest in front, anterior angles nearly right-angled, posterior angles obtuse,—a small, punctate, roundish fovea in each posterior angle,—the disk sparsely punctate, a very fine median longitudinal line running from the base forwards for two-thirds of the length of the thorax, and an elongate faint punctate impression on each side of it near the base; the apex not emarginate, the base not sinuate, both slightly rounded. Scutellum very broad and short, rounded posteriorly, smooth, impunctate, except one or two punctures near the base. Elytra a little longer than, but scarcely so broad as, the thorax, sides parallel; punctate-striate, the striæ effaced before the apex, the interstices impunctate, the space next the suture widest, depressed towards the suture; apex with the exterior angles

sloping and rounded, the sutural angles nearly right-angled. Abdomen sparsely and distinctly punctate, with fine, longish hairs, more frequent towards the sides; the pygidium with the fimbriæ very much raised. Legs ferruginous.

From Sarawak in Borneo. This is not so rare in collections as the other species.

##### 5. ORTHOGRAMMA DENTICEPS.

Elongata, linearis, depressa, nitida et testaceo-rufa, capite antice fuscescente, elytris fuscis; abdomine pygidio picco-fusco, segmentis cæteris testaceo-piceis, marginibus testaceis; capite antice medio longitudinaliter impresso et punctato, epistomate fortiter bidentato; thorace antice quam postice latiore; elytris leviter punctato-striatis; abdomine pygidio levissime punctato, segmentis cæteris vix punctatis. Long. 3 lin., lat.  $\frac{2}{5}$  lin. Fig. 85.



Epistoma.

Habitat in Singapore.

Elongate, linear, depressed, shining, testaceo-rufous, the head becoming fuscous in front; the elytra fuscous; the abdomen, except the pygidium, piceo-testaceous, with the margins of the segments testaceous; antennæ rufous, with the club dusky; legs testaceo-rufous. Head smooth and shining, impunctate behind, thickly but finely punctate in front; epistome with two projecting teeth (fig. 85). Thorax rather narrower behind than in front, anterior angles nearly right-angled, posterior angles obtusely rounded, sides declinate towards the front, apex truncate, disk finely punctate, more sparingly in the middle. Scutellum piceo-testaceous, impunctate. Elytra very finely punctate-striate, the striæ running obliquely inwards from the base and not extending beyond the shoulder, and becoming effaced before the apex. Abdomen scarcely punctate, except on the pygidium, which has a few fine punctures: some long hairs are scattered over the abdomen, more particularly along the sides and towards the apex.

From Singapore. Collected by Mr. Wallace.

##### 6. ORTHOGRAMMA PLANICEPS.

Elongata, linearis, parallela, depressa, nitida, testacea, capite antice piceo, elytris testaceo-piceis apice nigris; abdomine testaceo-piceo, medio longitudinaliter piceo, segmentorum marginibus pallide testaceis; capite plano; epistomate medio porrecto et truncato, utrinque parvo denticulo instructo; thorace longo, antice quam postice parum latiore, impunctato, linea dorsali lævi longitudinali; elytris levissime punctato-lineatis, lineis apice lateribusque oblitteratis. Long.  $2\frac{3}{4}$  lin., lat.  $\frac{1}{3}$  lin. Fig. 86.



Epistoma.

Habitat in peninsula Malayensi.

Elongate, linear, parallel, depressed, shining, testaceous, with the elytra testaceous, palest in the region of the shoulders and becoming black towards the apex; the abdomen testaceous, darker in the middle and pale on the margins of the segments; mandibles and sides of the head in front gradually darker than the rest; antennæ testaceous, club dusky. Head long, flat, sloping slightly to the front, finely punctate on the flat disk, impunctate on the sides; epistome porrect in the middle, the

projecting portion truncate, with a slight projection or tooth on each side of the truncate part (fig. 86). Thorax long, very nearly equal in front and behind, but rather narrower behind; posterior angles rounded, anterior declinate and nearly right-angled; apex truncate; impunctate, with a fine dorsal line reaching from the base to about a fourth of the length of the thorax from its apex. Scutellum impunctate. Elytra very finely punctate-lineate, the lines, which are about seven on each elytron, becoming effaced towards the sides and apex. Abdomen shining and impunctate, except a few faint punctures towards the base of the pygidium. Legs testaceo-piceous; tarsi pale testaceous.

Collected by Mr. Wallace in the Malayan Peninsula. There is a specimen in the British Museum.

#### 7. ORTHOGRAMMA SAUNDERSII.

Linearis, elongata, depressa, nitida et ferrugineo-picea, elytris nigris, abdomine piceo-nigro; antennis ferrugineis, clava fusca; pedibus piceo-testaceis, tarsis testaceis; capite antice levissime punctato et linea levi punctata impresso, medio longitudinaliter impresso, postice impunctato, utrinque fovea parva instructo, epistomate bidentato, leviter et crebre punctato; thorace impunctato; elytris vix lineatis; abdomine fere impunctato, pygidio sparsim leviter punctato. Long.  $2\frac{1}{4}$  lin., lat.  $\frac{1}{4}$  lin.

Fig. 87.



Epistoma.

Habitat in insula Dorey in Nova Guinea.

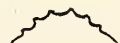
Slender, narrow, linear, depressed, shining. Head, thorax, and scutellum ferrugineo-piceous; elytra black; abdomen piceous black; antennæ ferruginous, with the club dusky; legs piceo-testaceous, tarsi testaceous. Head smooth and shining, impunctate behind, very finely punctate towards the front, and with the epistome more closely punctate, slightly projecting on each side in front (fig. 87); between them, extending back longitudinally for some space, is a slightly depressed line irregularly punctured, on each side of which, further back than the line of the antennæ and not so far back as the line of the eyes, is a small fovea. Thorax about as wide behind as before; anterior angles nearly right-angled, posterior rounded; impunctate. Scutellum impunctate. Elytra with mere faint traces of lines towards the suture, the rest smooth; a few long hairs along the exterior margin. Abdomen smooth, with a few faint punctures and hairs; the pygidium somewhat more punctate.

From Dorey, one of the New Guinea Islands. Collected by Mr. Wallace, and named in honour of Mr. Wilson Saunders.

#### 8. ORTHOGRAMMA BREVICEPS.

Elongata, linearis, valde depressa, irregulariter punctata, sat nitida et glabra; capite, thorace et abdomine ferrugineo-rufis, antennis pedibusque rufis; epistomate levissime quinquies emarginato; elytris testaceis, apice brunneo; thorace lineis tribus longitudinaliter leviter impresso; elytris striato-punctatis, interstitiis impunctatis; abdominis segmentis dilutioribus. Long.  $1\frac{2}{3}$  lin., lat.  $\frac{1}{3}$  lin.

Fig. 88.



Epistoma.

Habitat in insula Nicobaria.

Elongate, linear, very much depressed, irregularly punctate, somewhat shining, ferrugineo-rufous. Head shorter than in *O. fuscipennis*, flat, irregularly and rather thickly punctate; eyes larger than in most of the other species; epistome apparently with four, but in reality with six, small teeth on the margin, caused by five slight emarginations (fig. 88). Thorax longer than the head, very much depressed, with a longitudinal smooth depression in the middle scarcely punctate; on each side of this there is a slight longitudinal elevation, and, again, on each side of these a less marked depression; on the outer sides of these the surface is more deeply punctate, punctures mostly elongate; the sides are nearly parallel and straight, slightly declinate, more so in front; anterior angles nearly right-angled, posterior angles rounded; apex straight, base somewhat rounded, the edges of both a little turned up. Scutellum shining, impunctate. Elytra testaceous or livid testaceous, with the apex more or less livid brown, very little longer than the thorax, parallel, hollowed towards the suture and scutellum; humeral angles distinct; sides straight when seen from above, but slightly declinate and inflexed, and, seen from the side, a little widest behind the middle; punctate-striate, the interstices impunctate; apex with the exterior angles rounded and sloping obliquely to the suture, but when near the suture becoming truncate; sutural angles right-angled. Abdomen ferrugineo-rufous, with the pygidium somewhat piceous; the fimbriæ very strongly marked; a slightly raised longitudinal line in the middle of the penultimate and antepenultimate dorsal segments. Legs testaceous.

This stands in some collections as Laporte's *Cillæus filiformis*, but it is obviously different—being glabrous, while his species is described as pubescent.

From Nicobar. In the Hope collection at Oxford; also in the Copenhagen collection and in the British Museum.

Genus *HALEPOPEPLUS* (χαλεπός, hard; πέπλος, robe).

Caput sulcis antennariis convergentibus. Labrum simplex, transversum. Epistoma leviter porrectum, subconvexum. Thorax basi et angulis rotundatus. Prosternum prominens. Elytra striata. Abdomen thorace longius, segmentis primo et secundo brevioribus, tertio et quarto majoribus, quinto maximo, supra segmentis ultimis tribus expositis; fimbriis modicis, subparallelis. Tibiæ apice vix canaliculatae.

Body long, subconvex, subdepressed on the disk. Texture hard. Head rather large and broad. Epistome broad, only slightly projecting. Eyes rather small. Antennæ with the first article enlarged, second small, third longer (second and third as long as the five following), fourth to eighth small, gradually increasing in breadth, ninth to eleventh forming the club, of which the ninth occupies the greater part; club roundish. Antennal grooves distinct, short, and converging. Labrum transverse, slightly emarginate in the middle. Mandibles with a simple point, not toothed behind. Maxillary lobe rather broad, with the apex oblique and terminated by a fringe of long hairs, but without any on the inner side. Maxillary palpi somewhat longer than the maxillæ; first article minute, second somewhat pyriform, third short, fourth cylindric conic. Ligula corneous, with a broad, ciliated, membranous lobe, apparently double, on each side (Plate XXXV. fig. 1 e). Labial palpi with the first article small, the second tumid and

subglobose, the third broad, subcylindrical, widest at the apex—the three together having a considerable resemblance to the stalk and head of a Scotch thistle. Mentum broad, deeply emarginate, the sides of the emargination irregularly indented. Prothorax with the sides and all the angles rounded, sides margined; apex slightly emarginate, base not sinuate. Scutellum transverse, rounded on the posterior side. Elytra striate, narrower behind than before, truncate; sides margined. Abdomen with the first two segments shorter than those which follow; pygidium longest; three segments exposed above, and bearing moderately broad fimbriæ, which are subparallel, slightly convexly sinuate on the inner side; there is an additional minute anal appendage in the males (?). Legs stout; tibiæ with only a small, short trace of the channel for the reception of the tarsi which occurs in the *Brachypepli*; tarsi moderately dilated.

This genus forms the passage between the *Brachypepli* and *Conotelus*. It has the structural characters and size of the former, with a tendency to the form of the latter. The differences between it and the normal characters of *Brachypeplus* are the following. In *Brachypeplus* the form of the body is oblong, narrow, parallel, usually flat and depressed. In this genus the body is somewhat convex, and begins to diminish from the thorax backwards, giving it a long cuneiform shape like that of *Conotelus*. The texture in *Brachypeplus* is generally somewhat flexible, rather soft, subrugose, and pubescent. In *Halepopeplus* it is hard, shining, and without pubescence. The thorax in the former has the posterior angles usually more or less right-angled, the base straight and applied to the elytra. In *Halepopeplus* the base and posterior angles are rounded. The prosternum is prominent and projecting backwards, almost entirely covering the mesosternum, instead of being narrow and flat. The fimbriæ of the abdomen are more parallel. The channel on the outside of the apex of the tibiæ, which is so marked in the *Brachypepli*, has here almost disappeared.

*Position and Affinities.*—BRACHYPEPLUS.      HALEPOPEPLUS.      CONOTELUS.  
CAMPSOPYGA.

#### 1. HALEPOPEPLUS BIPUSTULATUS.

Elongatus, nitidus, leviter punctatus, niger, capite antice, antennis, maxillis, elytris singulis macula apicali rubris; elytris punctato-striatis. Long. 4 lin., lat.  $1\frac{1}{3}$  lin.

Habitat apud flumina Amazonum.

Fig. 89.



Elongate, faintly punctate, shining, black, with a curved dull-red band across the head behind the clypeus; the anterior margin of the clypeus dull red, the antennæ and maxillæ testaceous red, and a patch on the elytra near the apex red. Head finely and closely punctate; two impressions, one on each side of the middle, and almost united; the dull-red band in front of the head interrupted by a narrow black line in the middle. Thorax one-fourth broader than long, subquadrate, smooth, and convex, with all the angles broadly rounded, very finely and equally punctate all over, feebly emarginate in front; sides, front, and base margined. Scutellum transverse, subpentangular, the posterior angles rounded. Elytra one-fourth longer than the thorax, a very little narrower behind than at the base; sides abruptly declinate, deeply margined, slightly sinuate and hollowed

out within the margin, depressed towards the suture; punctate-striate, striæ eight and a half in number; the stria next the suture broader, being double at the base; last external stria beyond the shoulder deepest in the middle; the striæ are effaced a little before they reach the apex, which is then irregularly punctate; the interstices are most faintly punctate in rows; the red patch near the apex is somewhat conical in shape, leaning outwards, and its base (the side next the apex) truncate and parallel to the apex, which is obliquely truncate; the sutural apical angles are right-angled, slightly sinuate; the exterior apical angles are rounded. The abdomen is closely and finely aciculary punctate. Underside of abdomen more coarsely (almost subrugosely) aciculary punctate, the last three segments each with a large fovea on each side, which is not present in the first two. Underside of thorax ferrugineo-piceous. Thighs and tarsi ferrugineo-piceous; tibiæ nigro-piceous.

A unique specimen in the British Museum.

Collected by Mr. Bates near Ega, on the Amazons. Found flying over dead trunks of trees in sunshine in the driest weather.

## 2. *HALEPOPEPLUS ERYTHROPYGA*.

Valde affinis *H. bipustulato*; niger, capite linea transversa, elytris singulis macula apicali et abdomine pygidio rubris; cæteris fere ut in *H. bipustulato*. Long.  $3\frac{3}{4}$  lin., lat.  $1\frac{1}{4}$  lin.

Habitat apud flumina Amazonum.

Very closely allied to *H. bipustulatus*, perhaps one of its sexes; but as I have only seen single specimens of each, it is premature to say. It is rather narrower; the head is not so broad; the thorax not so much dilated, and consequently rather larger; the elytra are each more convex and more depressed towards the suture, and the sutural stria is more punctate; the red patch at the apex of each elytron is rather larger, and the last segment of the abdomen is wholly red instead of black. In other respects it is almost identical with *H. bipustulatus*.

From the Amazons. Found under the same circumstances, flying in the sunshine over dead timber.

## 3. *HALEPOPEPLUS BATESII*. (Plate XXXV. fig. 1.)

Valde affinis *H. bipustulato*; aurantiacus, elytrorum limbo atque abdomine (segmento ultimo excepto) nigris. Long.  $3\frac{3}{4}$  lin., lat.  $1\frac{1}{4}$  lin.

Habitat apud flumina Amazonum.

Nearly allied to *H. bipustulatus*. Bright orange-coloured, with the margins of the sides, the apex, and the abdomen, except the last segment, black. The impressions on the head are united into a large, transverse, deeply punctate impression across the head, behind the labrum. Thorax more rounded, more emarginate in front, more shining, and finely punctate. Elytra less depressed towards the suture; the striæ effaced further from the apex than in *H. bipustulatus*. In other respects this species does not appear to differ from it.

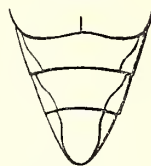
It is not impossible that all the three species which I have above described may prove to be varieties of the same.

From the Amazons. Collected by Mr. Bates under the same circumstances as the preceding species or varieties.

Genus CAMPSOPYGA (*καμψός*, incurved, and *πυγή*, pygidium).

Caput oculis sat magnis, basin attingentibus, sulcis antennariis convergentibus. Labrum integrum. Mandibulæ apice bicuspidatæ. Elytra striata. Abdomen segmentis tribus dorsalibus expositis, segmento secundo brevior, ultimo longior, cæteris fere æqualibus; fimbriis pygidii postice angustioribus, segmentis expositis cæteris postice latioribus. Tarsi dilatati.

Fig. 90.



Body subfusiform. Head short, with the epistome slightly projecting. Eyes prominent, extending to the back of the head. Antennal grooves small, narrow, converging. Antennæ with the first article large, depressed, and dilated in front, second smaller, but larger than the following, third small, longer than those which follow, and slender at the base, fourth, fifth, and sixth, lying very close together, short, slender, and about equal, the sixth a little thicker than the fourth, seventh and eighth more distinct, short, transverse, and lenticular, ninth, tenth, and eleventh forming a large ovate club, equal in length to the articles from the third to the eighth. Labrum entire. Mandibles with the apex bicuspid. Maxillary lobes short and rather narrow, bearded on the inner side. Maxillary palpi with the first article very small, second rather large, dilated on the outer side, third shorter, fourth longest, cylindrico-conical. Ligula emarginate, with a membranous obovate lobe projecting nearly straight in front on each side. Labial palpi slender; first article short, second longer, and apical article rather the longest. Prothorax subdepressed, rather narrower in front than behind. Scutellum rounded. Elytra striated. Abdomen above with the last three segments and the margin of the fourth exposed; the second shortest, the last longest, and the rest nearly equal; the pygidium not emarginate at the apex; fimbriæ sinuate, those of the last segment widest in front, of the other segments widest behind. Prosternum slightly keeled, scarcely projecting behind; metathorax without axillary pieces. Legs moderate; posterior coxæ more widely apart than the others; tarsi dilated.

This genus has considerable resemblance to *Prosopeus*, but differs in several respects. The mandibles have the apex bicuspid instead of being simple. The labial palpi are slender instead of thick; the ligula and its membranous lobes are differently formed. The thorax is rather narrower in front than behind, while it is the reverse in *Prosopeus*. The abdomen has three segments fully exposed above, while in *Prosopeus* there is little more than two. The fimbriæ, instead of being nearly parallel as in *Prosopeus*, are narrow in front and broad behind, except on the pygidium, where they are narrow behind and broad in front. The pygidium also is deeply emarginate in *Prosopeus* and not in *Campsopyga*.

HALEPOPEPLUS.

*Position and Affinities.*—BRACHYPEPLUS.

CAMPSOPYGA.

PROSOPEUS.

MACROSTOLA.

## CAMPSOPYGA PALLIDIPENNIS. (Plate XXXVI. fig. 8.)

Elongato-fusiformis, subdepressa, nitida, fere glabra, picco-brunnea vel nigro-picea, ore, antennarum basi thoracisque marginibus testaceis; elytris picco-testaceis, basi et lateribus saturatioribus; capite et thorace leviter punctatis; elytris leviter striato-punctatis, interstitiis impunctatis; abdomine levissime punctato. Long.  $2\frac{1}{4}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in Venezuela.

Somewhat elongate-fusiform, subdepressed, shining, slightly punctate, almost glabrous, piceous, with the antennæ (except the club, which is fuscous), the mouth, the sides of the thorax, and the legs testaceous; the breast fuscous; the elytra piceo-testaceous, with the base and sides darker. Head finely punctate, with an impression on each side behind the epistome. Thorax finely and sparsely punctate, a little longer than the head, about a half broader than long, transverse, widest about the middle, slightly narrower in front than behind; sides rounded, apex very slightly emarginate; anterior angles rounded, posterior obtuse; base slightly bisinuate; the testaceous margin rather broad, and encroaching a little both on the base and the apex. Scutellum rather large, rounded at the apex, slightly punctate. Elytra a half longer than the thorax, a little wider than its base, punctate in rows, the interstices not punctate, punctures roundish; humeral angles nearly right-angled, rounded; apex obliquely truncate; exterior apical angles rounded, sutural angles right-angled, shoulders not prominent; suture, base, neighbourhood of scutellum and shoulders, sides, and apex all a little darker than the disk and somewhat fuscous. Abdomen slightly convex, finely punctate, and slightly pubescent.

This species has much general resemblance to the species which I have described under the name of *Prosopæus subæneus*, from the Cape of Good Hope.

From Venezuela. Received from the Berlin Museum, and now in the British Museum.

Genus HYPODETUS (*ὀπόδετος*, shod, bearing shoes or sandals,—in allusion to the dilated tarsi).

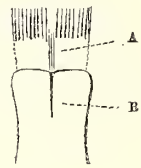
Caput oculis magnis, basin ejus attingentibus; epistomate porrecto; sulcis antennariis convergentibus. Mandibulæ cuspidatæ. Ligula angustata, sine alis. Thorax elytris angustior. Elytra striata vel subcostata. Abdomen postice attenuatum; segmentis omnibus (ultimo maximo excepto) fere æqualibus; fimbriis fere parallelis, pygidii postice angustioribus. Tarsi valde dilatati.

Body elongate, and somewhat conical at each end. Head rather broad; the eyes very large, reaching to the base of the head; and the epistome very prominent, narrow, and projecting. Labrum transverse, faintly emarginate. Mandibles with the sides straight, bicuspid, with a slightly bearded lamella on the inner side (Pl. XXXV. fig. 6*g*). Antennæ with the basal article large and dilated, second article subglobose, third longer, fourth short, fifth longer, sixth shortest and smallest of all, seventh and eighth gradually a little wider, ninth to eleventh forming the club, the eleventh being the largest (Pl. XXXV. fig. 6*a*). Antennal grooves short and converging. Maxillary lobes moderate in size, shortly bearded all over from the point for nearly half their length (Pl. XXXV. fig. 6*f*). Maxillary palpi not very stout, with the second and terminal articles longest

and nearly equal in size, the first article minute, and the third short (Pl. XXXV. fig. 6*f*). Ligula narrow and oblong, the paraglossæ extending beyond it, nearly of the same breadth, and terminating in a flat brush of hairs like a painter's flat brush. Plate XXXV. fig. 6*e*, which is intended for this, does not give a correct representation of it. There is no appendage at the base of the second article of the labial palpi, and the termination of the ligula is as shown in the wood-cut (fig. 91). I only discovered its true nature, since the Plate was engraved, by finding the paraglossæ (A) shifted a little out of their place behind the ligula (B), as shown in fig. 92. Labial palpi with the second article elongate, and third more slender, subcylindrical, and slightly shorter (fig. 91). Mentum emarginate, without a projecting tooth in the middle (Pl. XXXV. fig. 6*e*). Prothorax rather narrower behind than in front, margined. Scutellum transverse. Elytra wider than the thorax, somewhat costate. Abdomen below with all the segments nearly equal, except the pygidium, which is largest; three segments exposed above, the margin of the fourth visible; the fimbriæ well marked, rather broad, widest in front on the last segment, nearly parallel on the other segments. Prosternum dilated behind the anterior coxæ. Metathorax without axillary pieces. Legs stout; femora with a channel below to receive the tibiæ; tibiæ dilated, with a channel on the outside of their apex to receive the tarsi, and each side of this channel thickly fringed with hairs. Tarsi very much dilated, and clothed below with long hairs.



Fig. 92.



The most visible characters on which this genus is founded are the thorax narrower than the elytra, and the abdomen attenuated behind, so as to give it a conical outline. A less visible character is the difference in the ligula and maxillæ. I have met with no similar ligula in the group; and the maxillæ are so slightly bearded as to appear little more than pubescent—a character which, although occurring not unfrequently in the other groups of the *Nitidulidæ*, is rare among the *Carpophilidæ*.

This genus is out of its place here. It is certainly one of the *Brachypeplidæ*, and should come before *Cillæus* and *Orthogramma* instead of after them. It has the fimbriæ, the tibiæ, and the elytra of *Brachypeplus*. But if I had placed it there, I must have separated *Adocimus* from *Brachypeplus* or else from *Cillæus*; and as that genus forms the passage between these genera, I have had no alternative but to separate this from its nearest allies. It breaks off from *Brachypeplus* at the subgenus *Selis*.

## CARPOPHILUS.

*Position and Affinities*.—BRACHYPEPLUS.

HYPODETUS.

CAMPSOPYGA.

PROSOPEUS.

## HYPODETUS XANTHURUS. (Plate XXXV. fig. 6.)

Subfusiformis, subdepressus, nitidus, fere glaber, levissime punctatus; piceo-brunneus, abdomine saturatiore, pygidio flavo; elytris subcostatis. Long. 4 lin., lat.  $1\frac{1}{3}$  lin.

Habitat in Brasilia?

Somewhat elongate, subfusiform, attenuated behind, somewhat narrowed in front, subdepressed, shining, finely and sparsely punctate, piceo-brunneous. Head punctate, with

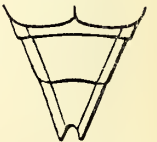
an impression across it behind the projecting epistome. Thorax transverse, broader than long, with the apex slightly emarginate, broadest before the middle, narrower and slightly sinuated behind, rounded in front, narrower behind than in front; anterior angles rounded, posterior angles approaching to right angles, but the point is obliquely cut off and obtusely rounded; punctate; base bisinuate, truncate. Scutellum broad, transverse, semicircular. Elytra at least a half longer than the thorax, about one-third wider, the base straight, and the shoulders prominent close to the humeral angles, which are rounded; sides nearly parallel, almost straight, declinate; there is a longitudinal depression inside the shoulders, and the suture is slightly depressed; subcostate, the costæ slightly sinuate, the interstices faintly punctate somewhat irregularly in rows; exterior apical angles slightly rounded, nearly straight, sutural angles nearly right angles. Abdomen rather thickly punctate, darker than the other parts of the body; pygidium flavous. Body below testaceous.

Believed to be from Brazil. I received a single specimen many years ago among a number of Brazilian insects, and I have never seen a second. Now in the British Museum.

Genus PROSOPEUS (*προσωπεῖος*, disguised).

Caput oculis sat magnis, basin ejus attingentibus; epistomate modice porrecto; sulcis antennariis convergentibus. Labrum integrum. Mandibulæ apice simplici. Thorax elytris angustior. Elytra striata. Abdomen segmentis duobus et apice tertii dorsalibus expositis, segmento secundo brevior, ultimo longior, cæteris fere æqualibus; fimbriis distinctis, subparallelis, latioribus, pygidii antice dilatatis, postice angustatis; pygidio profunde emarginato. Tarsi dilatati.

Fig. 93.



Body subfusiform. Head short, with the epistome somewhat projecting. Eyes prominent, extending to the back of the head. Antennal grooves small, narrow, converging. Antennæ with the first article rather large and dilated in front; second smaller, ovate; third elongate; fourth to eighth short and nearly equal; seventh and eighth a little broader; ninth, tenth, and eleventh forming a large ovate club. Labrum entire. Mandibles with the apex simple. Maxillary lobes short, bearded from the apex on the inner side. Maxillary palpi with the first article very small, second dilated on the outer side, third shorter, fourth longest, cylindrico-conical. Ligula broad, with a short, semioval membranous lobe placed obliquely in front on each side. Labial palpi stout, with the first article small, the second and third rather stout, subovate, nearly equal. Prothorax subdepressed, broader in front than behind, and narrower at the base than the elytra. Scutellum rather large. Elytra striated. Abdomen above with two segments and the margin of a third segment exposed, the second segment shortest, the last longest and emarginate at the apex, the rest nearly equal; the fimbriæ not wide, subparallel. Prosternum not keeled, but projecting somewhat behind. Metathorax without axillary pieces. Legs not very robust. Tarsi dilated.

BRACHYPEPLUS.

*Position and Affinities.*—CAMPSOPYGA.

PROSOPEUS.

MACROSTOLA.

CARPOPHILUS.

## PROSOPEUS SUBÆNEUS. (Plate XXXIII. fig. 10.)

Subfusiformis, subdepressus, subæneo-brunneus, nitidus, punctatus, thorace lateribus rufo-testaceis translucentibus; elytris humeris, macula suturali prope apicem fere scutellum attingente et altera parva medio indistincte subtestaceis; elytris striatis, interstitiis seriatim punctatis. Long. 2 lin., lat.  $\frac{3}{4}$  lin.

Habitat in Caffraria.

Subfusiform, subdepressed, subæneo-brunneous, shining, punctate. Head strongly punctate. Antennæ testaceous. Thorax elongate, broader in front than behind, with the sides rufo-testaceous, slightly rounded, broadest before the middle, translucent, scarcely margined but slightly reflexed, rugosely punctate, more especially in front, with the disk slightly convex, slightly impressed on each side before the base; anterior angles nearly right-angled, posterior angles obtuse. Scutellum nigro-piceous or black, lightly punctate. Elytra broader and about a third longer than the thorax, a good deal broader than the base of the thorax, punctate-striate, punctures angular, interstices with a row of punctures, subquadrate; the shoulders square and rather prominent, the sides almost parallel, the apex of each elytron truncate obliquely inwards and forwards, exterior apical angles rounded, sutural angles slightly obtuse; the base with an elongate spot near the suture, reaching almost from the scutellum to the apex, and another small spot in the middle, indistinctly subtestaceous. Abdomen with fimbriæ and margins of last three segments below translucent and subtestaceous. Legs testaceous.

From the Cape of Good Hope.

*Transition-Genera between the LATE-FIMBRIATA and ANGUSTE-FIMBRIATA.*

Genus MACROSTOLA (*μακρὸς*, long; *στολή*, vest: alluding to the elytra).

Caput oculis maximis, tota capitis latera occupantibus; epistomate porrecto. Labrum integrum. Ligula angusta, alis membranaceis angustatis. Elytra elongata, striata vel seriatim punctata. Abdomen tribus segmentis expositis, haud fimbriatis, segmento secundo brevi, primo, tertio et quarto fere æqualibus, ultimo longiore.

Subconvex, elongate, conical both in front and behind. Head with the epistome projecting. Antennæ (Pl. XXXV. fig. 7 *a*) with the first article large and dilated, second smaller but thickish, third of same length as the second but more slender, fourth equal in thickness to but shorter than the third, fifth shorter and slightly thicker, sixth and seventh slightly thicker and more quadrate and about the same length as the fifth, eighth short and somewhat lenticular, ninth and tenth large, and eleventh smaller, these three forming a club so closely united as on a cursory view to look as if only composed of two articles. Labrum entire. Mandibles bicuspid at the apex. Maxillæ bearded on the inner side, without any tooth at the base. Maxillary palpi four-jointed, the second and third joint largest, the fourth conical. Ligula elongate and narrow, the tips of the paraglossæ visible on each side of the apex of the ligula\*. Labial palpi three-jointed, the

\* The structure of the ligula and paraglossæ in this species is very instructive. The ligula is seen in fig. 7 *e*, in

first joint very short, the second long and curved, the last straight on the inner side, gradually thickened towards the middle on the outer side. Mentum transverse, emarginate. Eyes very coarsely granulated and of very large size, occupying the whole of the space behind the antennæ and between them and the thorax: each eye is nearly as broad as the head between them. Prothorax small, transverse, subquadrangular. Scutellum large and broad. Elytra long, fully twice the length of the thorax, leaving the last three segments of the abdomen exposed. Exposed dorsal segments of abdomen shorter than the elytra, and very little, if any, longer than the thorax; fimbriæ absent, the suture between the ventral and dorsal segments of the abdomen being placed at the margin; the second segment of the abdomen the shortest, but not very short; the first, third, and fourth about equal in length; the last not very large—longer than the penultimate segment, not longer than the two penultimate segments taken together. Prosternum flat, slightly projecting and rounded, resting upon the mesosternum, which is flat and broad. The metathorax without axillary pieces. Legs moderate; tibiæ without a channel for the reception of the tarsi; tarsi not greatly dilated.

This genus is exceptional so far as regards the fimbriæ: they are as little developed as in a *Carpophilus*; but the other characters combine to show that its place is among the broadly fimbriated species of this group, and therefore I have put it here, although this character belies the very name I have given to the section in which it is placed. It is one of those cases in natural history which put at defiance all attempts to walk by absolute rules or invariable characters.

## CILLÆUS.

*Position and Affinities.*—PROSOPEUS.

MACROSTOLA.

CONOTELUS.

CARPOPHILUS.

## 1. MACROSTOLA STRAMINEA. (Plate XXXV. fig. 7.)

Subconvexa, elongato-fusiformis, nitida, glabra, læte castaneo-testacea, leviter punctata; elytris leviter punctato-striatis, interstitiis lineatis, sutura haud depressa. Long. 3 lin., lat.  $\frac{3}{4}$  lin.

Habitat in Mexico.

Subconvex, elongate-fusiform, shining, glabrous, lightly punctate, bright testaceous chestnut. Head punctate, bifoveolate in front. Thorax transversely oblong, gently and slightly rounded in front, not emarginate, faintly punctate; posterior angles right-angled, anterior rounded. Scutellum faintly punctate at the base. Elytra subparallel, slightly narrower in front and behind, punctate-striate, with a faint line sometimes subpunctate in the interstices, the striæ reaching almost, but not quite, to the apex; humeral and exterior apical angles rounded, not depressed at the suture; convex and truncate at the apex; sutural angles nearly right-angled. Abdomen finely and thickly punctate.

From Mexico. Collected by M. Sallé.

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Plate XXXV.; the paraglossæ in fig. 7 *e*\*, which shows the back view. When the ligula is laid on the front of this, we have fig. 7 *e*\*\*\*, which we see on looking into the mouth.

2. *MACROSTOLA LUTEA*.*Cillæus luteus* (Moritz).*Ips striatus* (Schönh.).

Statura *M. stramineæ* et ei valde affinis, minor, luteo-testacea; elytris striato-punctatis, interstitiis haud lineatis. Long. 2 lin., lat.  $\frac{1}{2}$  lin.

Habitat in America centrali, apud Cumanam, &c.

Of the form and appearance of *M. straminea*, to which it is very closely allied. Considerably smaller, luteo-testaceous; the head and thorax very faintly punctate; scutellum impunctate; elytra longitudinally convex, with the suture depressed, punctate-striate, without any line between the striæ. In other respects as in *M. straminea*.

Easily distinguished from *M. straminea* by its smaller size, luteous colouring, more sparing and feebler punctuation, by the depressed suture of the elytra, and chiefly by the absence of the line between the striæ on the elytra.

From Cumana.

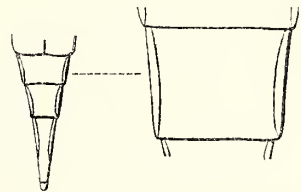
## Genus CONOTELUS.

Erichs. in Germ. Zeitschr. iv. 249 (1843).

Lacordaire, Histoire des Ins. Coléoptères, ii. 298 (1854).

Caput sulcis antennariis, epistomate porrecto; oculis basin capitis attingentibus. Labrum integrum. Palpi labiales incrassati. Elytra levissime seriatim punctata vel striata. Abdomen segmentis primo et secundo brevissimis, tertio et quarto magnis, quinto elongato-conico, maris segmentulo anali dorsali auctum; fimbriis angustis, lateribus parallelis.

Fig. 94.



Small, narrow, convex, elongate, tapering from before backwards. Head moderate. Epistome slightly porrect. Eyes large and projecting, and occupying the whole side of the head from the antennæ to the base. Antennal grooves well marked and very convergent. Antennæ (Pl. XXXV. fig. 8a) scarcely so long as the head: the first article a little enlarged on the outside; second as large, globular; third longer than any of the five following, which become shorter and thicker by degrees; the ninth, tenth, and eleventh forming a thick and globular club, truncate at the end. Labrum entire. Mandibles small, sharp at the point, the point with two or three small teeth or serrations behind it. Mentum short, broadly and feebly emarginate, with a fissure in the midst. Maxillary lobe coriaceous, strongly bearded on the inner side. Maxillary palpi short; first article very small, second short and dilated on the outside, third short and cylindrical, last article as long as the rest united, cylindrical, and truncate at the apex. Ligula (Pl. XXXV. fig. 8e) coriaceous, with a small, rounded, membranaceous lobe at each of its anterior angles. Labial palpi robust: first article very small; second very large, thick, rounded, and truncate; third also large, but not quite so large, truncate. Prothorax not quite so broad as the elytra, transverse, convex. Elytra leaving the last three abdominal segments exposed, either striate or punctate in rows, although in some species so faintly as to be almost imperceptible. Abdomen elongate, tapering to the extremity: the first two segments very short, the next two long, the last elongate-

conical; a small anal segment added in the males. The last segment appears to vary much in different individuals, being sometimes very long and narrow, but this seems to depend on the size of the insect. I have only found the long, produced tail or apical segment in large individuals in which the other segments are also larger and longer. Metathorax with the epimera and parapleura narrow, and without axillary pieces. Fimbriæ usually\* very narrow and parallel to the sides. Legs short; thighs feebly canaliculated below; tibiæ without any channel for the reception of the tarsi; the first three articles of the tarsi dilated and hairy beneath; claws simple.

All the species of this genus are confined to the tropical regions of the American continent.

#### HALEPOPEPLUS.

*Position and Affinities.*—MACROSTOLA. CONOTELUS. CARPOPHILUS.

#### 1. CONOTELUS CONICUS.

Erichs. in Germ. Zeitschr. iv. 251 (1843).

*Stenus conicus*, Fabr. Syst. El. ii. 603 (1792).

Var. C. FUSCIPENNIS.

Erichs. in Germ. Zeitschr. iv. 251 (1843).

*Ips gracilis* (Dej. Coll.).

Niger, nitidus; thorace crebre punctato; elytris subseriatim punctatis, fuscis; pedibus testaceis. Long.  $1\frac{2}{3}$  lin.

Habitat in insulis Indicis occidentalibus.

Black, somewhat shining. Antennæ and labrum rufo-piceous. Head subrugulose punctate, bifoveolate in front. Thorax a little shorter than broad, thickly punctate, with the interstices leathery in appearance. Scutellum sparingly punctulate, rounded at the apex. Elytra punctate in rows, the punctures distinct, tolerably deep and well defined, and pretty far apart; fuscous, becoming black at the apex. Abdomen shining, more sparingly and faintly punctate, with the segments margined with piceous; below piceous, the anterior segments black at the base. Legs testaceous.

Under the microscope the thorax appears very distinctly (almost deeply) and sparsely punctate, without being mixed with pittings or variolose flat punctuation. The punctures on the elytra are also distinct, oblong in shape, and in rows, but not in striæ. It is easily distinguished by the widely punctate-striate elytra.

From the West Indies.

The variety *C. fuscipennis* (which is from Cuba) differs from the type in being nearly a half smaller, the mouth and antennæ paler, and the punctuation more sparing and more widely scattered. Erichson himself points out the affinity of these varieties. I have examined the typical specimen, which is founded upon a unicate, and it appears to me to be merely a variety, smaller in size, and, as is usually the case in such instances, more faintly punctate.

\* The exceptions are *C. rufipes*, *C. Mexicanus*, and *C. Stenoides*; and in these the fimbriæ are raised, prominent, and not so narrow as in the other species.

## 2. CONOTELUS OBSCURUS.

Erichs. in Germ. Zeitschr. iv. 252 (1843).

*Stenus spissicornis*, Fab. Syst. El. ii. 603 (1792).

Niger, capite, thorace elytrisq[ue] opacis, his subtilissime seriatim aciculariter punctatis, nigro-fuscis; abdomine nitido; pedibus testaceis. Long.  $1\frac{3}{4}$ –2 lin., lat.  $\frac{1}{2}$  lin.

Habitat in partibus meridionalibus Americæ borealis.

Black. Antennæ testaceous, with the club ferruginous. Head opaque, very thickly and faintly variolosely punctate, bifoveolate in front. Thorax very slightly narrower in front than behind, very thickly and faintly rugulose, opaque, most obsoletely subvariolosely punctate. Scutellum closely and faintly rugulosely punctate, opaque, with the apex rounded. Elytra very closely and faintly rugulose, densely and very faintly and obsoletely punctate-striate (punctures shallow pits), opaque, obscure fuscous, becoming black on all the margins. Abdomen sparingly and faintly punctate, shining, the segments margined with piceous, the last wholly piceous below. Legs testaceous.

Under the microscope the punctuation of the thorax is a mixture of larger and smaller, flat, variolose, pitted depressions. The serial punctures on the elytra are likewise flat, variolose, reminding one of rain-drops on sand.

Found in the south of North America.

## 3. CONOTELUS NIGER.

Erichs. in Germ. Zeitschr. iv. 253 (1843).

*Brachychlamys nigra* (Germ.).

Niger, capite, thorace elytrisq[ue] opacis; pedibus testaceis, basi piceis. Long.  $1\frac{3}{4}$  lin., lat.  $\frac{3}{5}$  lin.

Habitat in Brasilia.

Of the form and size of, and very closely allied to, *C. obscurus*. Black. Antennæ testaceous, the first two articles and the club piceous. Head opaque, with the forehead punctate-rugose, bifoveolate in front. Thorax very closely rugulose, very much obsoletely punctate, opaque. Scutellum closely and faintly rugulosely punctate, opaque, truncate at the apex. Elytra very closely and faintly rugulose, very faintly and most obsoletely punctate in rows, opaque, black. Abdomen sparingly and obsoletely punctate. Legs testaceous, with the thighs piceous at the base.

Distinguished from all the other species by its much more deeply punctate-rugose thorax.

From Brazil and other parts of South America.

## 4. CONOTELUS VICINUS.

Erichs. in Germ. Zeitschr. iv. 253 (1843).

Niger, subnitidus, capite, thorace elytrisq[ue] opacis, pedibus piceis. Long.  $1\frac{1}{2}$ – $1\frac{3}{4}$  lin., lat.  $\frac{3}{5}$  lin.

Habitat in Columbia.

Black, somewhat shining. Antennæ piceous, club black. Head opaque, with the

forehead punctate-rugose, bifoveolate in front. Thorax very thickly and finely rugulose, opaque. Scutellum very thickly punctate, opaque, truncate at the apex. Elytra very thickly and faintly rugulose, opaque, concolorous, with almost imperceptible, small, shallow surface-impressions in rows, the impressions smaller, closer together, and more oblong than in *C. femoralis*. Abdomen thickly punctate, somewhat shining. Legs pitchy black.

Very closely allied to *C. niger*, *C. femoralis*, *C. rufipes*, and *C. Mexicanus*. The following are some of the distinguishing points:—*C. niger* has the thorax much more coarsely punctate than any of the rest. *C. femoralis* has the surface more opaque and not so shining, the elytra with a slightly brownish-purple tinge, and the antennæ and legs testaceous instead of nearly black. *C. rufipes* is more opaque and not of so clear a black; so is *C. Mexicanus*, which, besides, is smaller and has black legs.

From Columbia.

##### 5. CONOTELUS FEMORALIS.

Erichs. in Germ. Zeitschr. iv. 253 (1843).

Niger, capite, thorace elytrisq. opacis, antennarum basi pedibusque testaceis, femoribus piceis. Long.  $1\frac{3}{4}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in Columbia.

Black. Antennæ testaceous, with the first article and the club piceous. Head opaque, faintly rugosely punctate, bifoveolate in front. Thorax very closely and faintly rugulose, opaque, margined, the margin continuing along the base. Scutellum very thickly punctate, opaque, with the apex truncate. Elytra very closely and faintly rugulose, opaque, brownish purplish black, with almost imperceptible, small, flat, shallow, roundish surface-impressions in rows, the margin well marked. Abdomen sparingly and finely punctate, shining. Legs testaceous, with the thighs piceous.

Very nearly allied to *C. niger*, *C. vicinus*, *C. rufipes*, and *C. Mexicanus*. See the remarks on them made under *C. vicinus*.

From Venezuela.

##### 6. CONOTELUS RUFIPES.

*C. femorali* affinis; differt thorace rugoso et haud punctato, pedibus testaceis. Long.  $1\frac{3}{4}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in Mexico.

Nearly allied to *C. femoralis*, and doubtless the Mexican representative of that Columbian species; rather smaller; and chiefly to be distinguished by the thorax and elytra having a texture like fine morocco-leather, and the thorax without punctures or nearly so. Head, thorax, and elytra dull. Abdomen somewhat shining. The elytra have slight traces of a linear arrangement of the rugosities. Abdomen somewhat shining and sparsely and finely punctate; fimbriæ broader than in most of the other species. Antennæ rufous, with the club dusky. Legs testaceous, thighs a little darker.

Collected by M. Sallé in Mexico.

## 7. CONOTELUS MEXICANUS.

*C. vicino* affinis; differt thorace rugoso et haud punctato, pedibus nigris. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{2}{5}$  lin.

Habitat in Mexico.

Closely allied to *C. vicinus*; and as *C. femoralis* and *C. vicinus* are very closely allied to each other in Columbia, so are *C. rufipes* and *C. Mexicanus* in Mexico, where they take their place. Smaller than *C. vicinus*; less shining and of a less clear black, it being rather a dull, very slightly brownish, black. Head, thorax, and elytra opaque, instead of being somewhat shining as is the case in *C. vicinus*. The thorax instead of being finely punctate is finely confluent rugose like morocco-leather. The elytra have very slight traces of a linear arrangement of its rugosities. The abdomen is somewhat shining and finely and sparsely punctate; fimbriæ broader than in *C. vicinus*. Legs black.

Collected by M. Sallé in Mexico.

## 8. CONOTELUS SUBSTRIATUS.

Erichs. in Germ. Zeitschr. iv. 253 (1843).

*C. nitidus* (Motsch.).

Niger, nitidus, punctulatus, elytris subtiliter punctato-striatis, interstitiis punctulatis; pedibus piceis. Long.  $1\frac{2}{3}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in Columbia et America centrali.

Black, shining. Antennæ testaceous, with the first article and the club piceous. Head very closely punctulate, bifoveolate in front. Thorax closely punctate, with the sides very faintly rugulose. Scutellum very faintly and obsoletely punctulated, with the apex rounded. Elytra faintly and neatly punctate-striate, the striæ becoming obsolete at the apex, the interstices flat, very faintly punctulate. Abdomen sparingly and obsoletely faintly punctulate. Legs piceous, knees and tarsi testaceous.

From Columbia.

## 9. CONOTELUS NITIDUS.

*C. substriato* affinis: niger, nitidus, sparsim et sat fortiter punctatus, convexus; thorace brevi, transverso, longitudine latiore; scutello transverso, truncato; elytris striato-punctatis, fortius et minus regulariter quam in *C. substriato*, interstitiis sparsim punctatis; abdominis segmentis brevibus; pedibus piceis. Long.  $1\frac{1}{3}$  lin., lat.  $\frac{2}{5}$  lin.

Habitat in Brasilia.

Black, shining, shorter than most of the others, convex, with the sides rounded; covered sparingly with distinct punctures. Thorax short, transverse, broader than long; base rounded, angles rounded and obtuse. Scutellum transverse, truncate. Elytra with irregular and interrupted rows of punctures, deeper but more interrupted than in *C. substriatus*; the interstices with an occasional puncture forming a widely scattered row, and with a great accumulation of punctures near the base; an elongate impression on each side of the suture towards its base. The exposed segments of the abdomen

distinctly covered with scattered large punctures shorter and apparently broader than usual.

I have seen only a single specimen, from Brazil, in Prof. Boheman's collection.

#### 10. CONOTELUS LUTEICORNIS.

Erichs. in Germ. Zeitschr. iv. 254 (1843).

Niger, nitidulus, pareius punetulatus, elytris subtiliter punetato-striatis, interstitiis sublævibus, pedibus testaceis. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in Brasilia.

Black, somewhat shining. Antennæ testaceous, with the club black, the first article pieceous. Head sparingly punetate, bifoveolate in front. Thorax sparsely punetate, with the sides very faintly rugulose. Scutellum very faintly sparingly punetate, rounded at the apex. Elytra neatly and faintly punetate-striate, the striæ becoming obsolete at the apex, the interstices having a leathery appearance, sparingly and obsoletely punetulated. Legs testaceous.

From Brazil.

#### 11. CONOTELUS STENOIDES.

*C. humeralis* (Motsch.).

Elongatus, angustatus, subdepressus, opaeus, punetatus, fuseo pubeseens, niger; antennis testaceis, elava ferrugineo-testacea; pedibus testaceis; thoracæ lateribus sub lente forte serratis; elytris tenuissime seriatim punetatis et subeostatis; abdomine angustato, fimbriis elevatis. Long.  $1\frac{1}{3}$ –2 lin., lat.  $\frac{2}{5}$  lin.

Habitat in America centrali.

Long, narrow, slender, subdepressed, very opaque, black or brown-black, granularly and variolously punetate, and fuseo-pubeseent. Antennæ testaceous, with the club large, oblong, pieco- or ferrugineo-testaceous. Mouth pieceous. Head very finely subrugosely punetate, the punctures, although very small, still more variolose than sharp, slightly depressed on each side of the epistome, which is rather prominent. Thorax subquadrate, about as broad as long, a little narrower behind than in front, scarcely emarginate in front; the sides nearly straight, slightly narrowed in front and obliquely cut off behind, the angle at which they turn in very obtuse, rounded; anterior angles nearly right-angled, very slightly obtuse; posterior angles apparently very obtuse; disk somewhat convex, with slight irregular depressions, sides slightly expanded and canaliculate: the margins, under the microscope, are seen to be more or less jagged or serrated, more coarsely punetate and pubescent than the head, the pubescence lying from the sides transversely towards the middle, and the punctures faintly variolose. Scutellum transverse, broad, truncate, punetate and pubeseent as on the thorax. Elytra wider and about a half longer than the thorax, with what appears to be a series of very slender raised lines, between which is another less raised line. These are, however, caused by the pubescence running in lines. If it is scraped off, the costæ disappear or nearly so. Between them is a series of variolose punctures (eight rows in all), and the general tex-

ture of the elytra is subgranulated; shoulders rounded, not prominent, sides straight and slightly margined; apex somewhat obliquely truncate; sutural apical angles right-angled, exterior apical angles rounded. Abdomen faintly punctate; fimbriæ raised and prominent. Legs testaceous.

From Panama. I owe this well-marked species to the kindness of M. de Motschulsky.

The following dichotomous Table may assist in determining the species of this difficult genus :—

	Wholly of one colour . . . . .	1
	Elytra not so black as the rest of the body . . . . .	2
1	{ Margins of thorax not crenulated . . . . .	3
	{ Margins of thorax crenulated . . . . .	<i>Stenoides</i> .
2	{ Elytra punctured in rows, punctures distinct, apart, rather deep and decided . . . . .	<i>conicus</i> .
	{ Elytra with small variolose impressions in rows . . . . .	<i>obscurus</i> .
3	{ Elytra clearly but finely punctate-striate . . . . .	4
	{ Elytra very indistinctly punctate in rows . . . . .	5
4	{ Striæ on elytra not interrupted, and interstices not punctate . . . . .	6
	{ Striæ sometimes interrupted, and interstices with a widely scattered row of punctures . . . . .	<i>nitidus</i> .
5	{ Thorax punctate . . . . .	7
	{ Thorax rugose like morocco-leather . . . . .	8
6	{ Antennæ and legs black . . . . .	<i>substriatus</i> .
	{ Antennæ (except the club) and legs testaceous . . . . .	<i>luteicornis</i> .
7	{ Thorax strongly and thickly punctate . . . . .	<i>niger</i> .
	{ Thorax not deeply punctate . . . . .	9
8	{ Legs testaceous . . . . .	<i>rufipes</i> .
	{ Legs black . . . . .	<i>Mexicanus</i> .
9	{ Thorax and elytra dull. Legs testaceous . . . . .	<i>femoralis</i> .
	{ Thorax and elytra somewhat shining. Legs black . . . . .	<i>vicinus</i> .

#### Section ANGUSTE-FIMBRIATA.

Abdomen fimbriis angustatis vel vix perspicuis. Elytra haud striata\*.

Genus CTILODES (κτίλος, a ram (battering-ram); εἶδος, appearance).

Caput oculis haud basin attingentibus; epistomate protenso, medio profunde excavato; sulcis antennariis convergentibus. Labrum bifidum, membranaceum, barbatum, elongatum. Mandibulæ magnæ, apice bicuspidatæ, interne dentatæ. Abdomen fere sine fimbriis; segmentis ultimis duobus expositis; secundo et tertio brevioribus.

Large, subcylindrical, oblong-ovate, irregularly punctate. Head large, broad, and when at rest dependent. Eyes not large, not projecting, and not reaching to the base of the head. Epistome conical and projecting, but at the point deeply excavated, leaving a

\* But for some exceptional species in the previous section, I should have added the presence or absence of striæ on the elytra to the breadth of the fimbriæ as a character for separating the sections. The whole of the *Anguste-fimbriata* (with the exception of those I have placed as transitional genera) have the elytra without striæ. The whole of the *Late-fimbriata* (with the exception of a few *Colasti*) have them more or less distinctly striated.

projecting tooth on each side. Labrum elongate, membranaceous, projecting, covered entirely with long hairs, bilobed, divided straight up the middle, the exterior margins sloping obliquely outwards and backwards. Antennæ rather longer than the head; first article not thick, but nearly as long as the seven following articles taken together; second article rather long, but much shorter than the first; third article longer than the second; fourth article also rather long, but shorter than the second; fifth, sixth, and seventh articles short, small, and nearly of the same size; eighth broader; ninth, tenth, and eleventh forming the club, which is flat and round. Antennal grooves very well marked, convergent. Mandibles large, thick, coarse, strongly punctate, slightly bent in an elbow on the outside, bicuspid at the apex, and with a rounded tooth or projection, and a fringed plate or beard behind it, on the inner side. Maxillæ large, thickly bearded at the apex and on the inner side\*. Maxillary palpi slender, subcylindrical, with the first article small, the second and third rather long, the second longer than the third, and the fourth elongato-fusiform and as long as the second and third taken together. Ligula corneous, with two large, subovate, transparent, membranous lobes. Labial palpi slender, cylindrical, first article minute, second and third nearly equal in length. Mentum broad, with a double margin (Pl. XXXVI. fig. 1 *e*), both margins broadly emarginate. Prothorax subcylindrical. Scutellum rounded at the apex. Elytra not striated, irregularly punctate, subquadrate, subcylindrical. Abdomen somewhat convex, with the last two segments exposed above; below, the second and third segments shortest and nearly equal, first and fourth nearly equal, last longest; fimbriæ scarcely present. Metathorax without axillary pieces. Legs stout. Tibiæ expanded on the inner side towards the apex, and there parallel to the outer side and thickly clothed with strong hairs. Tarsi much dilated, and thickly clothed with hairs. Claws simple and short.

The insect on which this genus is founded, although possessing characters too peculiar to allow it to be treated otherwise than as a distinct genus, has most affinity with the subcylindrical species of *Carpophilus*.

#### BOSTRICHUS.

*Position and Affinities.*—CONOTELUS.

CTILODES.

CARPOPHILUS.

LUCANUS.

CTILODES BOSTRICHOIDES. (Plate XXXVI. fig. 1.)

Oblongo-ovatus, subcylindricus, sat nitidus, crebre et fortiter punctatus, niger; labro tarsisque fulvo barbatus. Long.  $5\frac{1}{4}$  lin., lat.  $2\frac{1}{8}$  lin.

Habitat in insula Morty prope Gilolo.

Oblong-ovate when the head is protruded, when bent down oblong in front and oblong-ovate behind, subcylindrical, somewhat shining, thickly and deeply punctate, black; the labrum and the tarsi thickly clothed with bright reddish fulvous hairs. Head transversely depressed behind the forehead, and with a deep, concave, subcordiform depression in front, the broad bicurved end in front; sides of the epistome sinuate, margins transverse

\* In the examination of this part it became broken, and the fragments showed that it had split longitudinally into horizontal plates.

above the base of the antennæ. Thorax nearly quadrate, all the angles, apex, and sides rounded; base truncate, bisinuate; a slight depression immediately behind and along the apex, and two transverse, slight, broad depressions running across, the one a little before the middle, and the other a little before the base. Scutellum wholly punctate. Elytra with a slight depression around the scutellar region, and another still more slight behind it; shoulders square; sides seen from above straight, but from the sides rounded; the apex of each elytron truncate obliquely from the suture outwards and backwards, exterior apical angles broadly rounded, sutural angles obtuse. Underside punctate. The hairs on the inner side of the expansion of the tibiæ bright fulvous.

This singular insect, although a perfect Nitidularian and closely allied to *Carpophilus*, is interesting from its evident tendency to a relationship with *Bostrichus* and *Lucanus*. The fulvous-red hairy labrum and the large, coarse, geniculated mandibles of these families are here reproduced. We know nothing of its habits or mode of life, but it needs no ghost to tell us that, like the *Lucanidæ* and *Bostrichidæ* whose mandibles and labrum it respectively bears, it is a Xylophagous insect.

A single specimen was collected by Mr. Wallace in the island of Morty, near Gilolo. It is now in the British Museum.

#### Genus CARPOPHILUS, Leach.

Steph. Illustr. Brit. Ent. iii. 50 (1830).

Erichs. in Germ. Zeitschr. iv. 254 (1843).

Sturm, Deutschl. Ins. xv. 33, taf. 292 (1844).

Erichs. Naturg. Ins. Deutschl. iii. 134 (1848).

Lacord. Hist. des Ins. Coléopt. ii. 295 (1854).

Caput sulcis antennariis; epistomate porrecto. Labrum bilobum. Abdomen fimbriis vix perspicuis; segmentis duobus vel tribus expositis, plerumque secundo tertioque brevissimis; maris segmentulo anali ventrali auctum.

A numerous genus of insects, scattered over the whole world. Some of the species are cosmopolitan, having probably been introduced into distant countries by the agency of man. They are found in flowers, under the bark of trees, and in decayed fruits.

Their form is for the most part short, broad, and more or less depressed. Head broad. Eyes variable in size. Epistome raised and projecting; antennal grooves short and convergent. Antennæ a little longer than the head, the first article enlarged or widened on the outside; second cylindrical, thicker and a little shorter than the third; fourth to eighth short; ninth to eleventh forming a large club more or less rounded or oval. Labrum bilobed, the lobes rounded. Mandibles broad, their tip usually preceded by a small tooth on the inner side. Lobes of the maxillæ rather broad, ciliated at the apex and on the inner side. Maxillary palpi with the last article conical and as long as all the rest together. Labial palpi with the last article a little widened and truncated at the apex. Ligula entire, its angles with a membranous wing, which is slightly falcate, rounded at the end, and ciliated on the inner or anterior side. Mentum transverse, broadly emarginate in front. Prothorax transversal or subquadrate, feebly emarginate in front, with the sides margined, in most species as broad as the elytra and bisinuate behind.

Scutellum rather large. Elytra not striated, leaving the last two or three abdominal segments exposed, each elytron usually more or less obliquely truncate from the suture backwards; exterior apical angles rounded. Abdomen with the second and third segments usually very short; first, fourth, and fifth tolerably large; an additional rounded ventral anal segment in the males. Prosternum widened and rounded behind, reaching to the mesosternum. Metathorax without axillary pieces. Fimbriæ absent or minute. Legs short, robust; thighs canaliculated below to receive the base of the tibiæ, which are widened at the apex, their terminal spurs rather strong; the first three articles of the tarsi dilated, hairy beneath; claws simple.

These characters must not be expected to be found rigidly applicable to every species which belongs to this genus. It contains such a large number of species, many of which I have not had the opportunity of dissecting, that it is not improbable that some may turn out to deviate in one or other of the more minute characters. The more important characters will, however, be found in them all.

(Subgenus UROPHORUS (*οὐρά*, tail; *φορὸς*, bearer).)

Abdomen segmentis tribus ultimis supra expositis; elytris haud elongatis.

This subgenus differs from the normal *Carpophili* in having the last three dorsal segments of the abdomen exposed, instead of only two, while the elytra are only of moderate length. There is another subgenus (*Heterodontus*) in which three segments are exposed, but in it the elytra are much elongated and as it were overshadow the exposed segments. In this it is not so. With one exception, all the species yet known are shining, nearly glabrous, and hard in texture, while the other *Carpophili* are more or less pubescent and either shagreened or soft.

#### 1. CARPOPHILUS RUBRIPENNIS.

Erichs. Ins. Deutschl. iii. 135 (1848).

*Ips rubripennis*, Heer, Faun. Col. Helv. i. 417 (1841).

*Carpophilus castanopterus*, Erichs. in Germ. Zeitschr. iv. 256 (1843).

Oblongus, subcylindricus, confertim punctatus; elytris castaneis vel rubris, antennis pedibusque rufis. Long. 2 lin., lat.  $\frac{3}{4}$  lin.

Habitat in Europa meridionali.

A very distinct species. Oblong, subparallel, moderately convex, nearly glabrous, with scarcely any perceptible pubescence, black, somewhat shining; antennæ red; mouth more or less ferruginous. Head thickly and deeply punctate, the forehead on each side with a slight impression. Thorax of the breadth of the elytra, a half broader than long, rounded on the sides, widest in front, towards the sides more densely and very coarsely punctate, the punctures variolose; more sparsely and finely punctate in the middle; the marginal edging with a deep furrow, disappearing behind the anterior angles, which are somewhat projecting and rounded, the posterior angles very obtusely rounded; an impression on each side, some distance within these angles, in which the punctures are deeper. Scutellum finely punctate at the base. Elytra a half longer than the thorax,

thickly punctured, red, with a narrow edging of black at the base, and a wider one at the apex, both gradually passing from black into red; seen from above, the sides seem straight and parallel, but looked at from the side are seen to be gently rounded, and with their margins clear piceous red, deeply canaliculated, the furrow widest in the middle; apex of each elytron truncate obliquely from the suture backwards, exterior apical angles rounded, sutural obtuse. Breast and abdomen thickly punctured; segments of abdomen griseo-pubescent, the margins of the segments translucent and rufescent. Legs red.

Erichson in his Monograph in Germ. Zeitschr. treats *C. rubripennis* as possibly distinct from his *C. castanopterus*, because Heer in his description of the thorax gives as a character "margine laterali longitudinaliter obsolete impresso," which he could not find in his specimen (nor can I in mine); but in his 'Insekten Deutschlands,' published subsequently, he unites them.

Found in Austria, Sicily, Sardinia, Italy, &c., but very rare. Through the kindness of Dr. Schaum of Berlin I have been enabled to place a specimen in the British Museum.

## 2. CARPOPHILUS HUMERALIS.

Erichs. in Germ. Zeitschr. iv. 255 (1843).

*Nitidula humeralis*, Fab. Syst. El. i. 354. 31 (1792).

*Ips humeralis*, Dej. Cat. p. 134 (1837).

*Brachypterus picinus*, Bohem. Ins. Caffr. i. 560 (1848).

Parum latus, subquadratus, parum convexus, nigro-piceus, punctatus, parcissime pubescens, fere glaber, nitidus, durus; mandibulis palpisque rufo-ferrugineis, antennis pedibusque rufo-testaceis; capite prothoraceque crebre mediocriter punctatis, hoc utrinque ante basin leviter impresso; elytris dilutioribus, sat crebre mediocriter punctatis, singulis basi ad callum humeralem interdum macula obsoleta ferruginea.

Long.  $1\frac{3}{4}$  lin., lat.  $\frac{2}{3}$  lin.

Var. A. Elytris macula humerali absente.

Var. B. Glaber, minus fortiter punctatus; elytris totis castaneis.

Habitat in Madagascaria, Caffraria, India orientali, insula Mauritia, China, Java, etc.

Somewhat convex, subquadrate, rather broad, nigro-piceous, shining, punctate, very sparingly pubescent; texture hard. Head slightly convex, thickly punctate; the mandibles on the inner side and the palpi rufo-ferruginous. Antennæ short, rufo-testaceous, club darker, sparingly pubescent. Thorax shorter than broad, thickly punctate, slightly pubescent on the sides, lightly impressed transversely on each side before the base; in front rather deeply rounded, emarginate, the anterior angles obtuse; the sides gently rounded, widened in the middle, with the margins slenderly reflexed, very little narrowed behind, posterior angles obtuse, base slightly curved. Scutellum short, broad, rounded at the apex, very finely punctate. Elytra scarcely a half longer than the thorax, not broader than its base, somewhat convex, rather thickly punctate, usually marked near the shoulders with an indeterminate, obsolete ferruginous spot, shoulders not very prominent, sides somewhat widened in the middle, the apex of each elytron truncate obliquely backwards from the suture, sutural apical angles obtuse, exterior apical angles rounded.

Body below nigro-piceous, somewhat shining, faintly thickly punctate. Legs rufo-testaceous, obsoletely punctulate, sparingly pubescent.

From Madagascar, Mauritius, Natal, Caffraria, East Indies, Java, and China.

### 3. CARPOPHILUS FOVEICOLLIS.

Valde affinis *C. humerali* Fab., forsan varietas ejus; major, magis depressus, magis punctatus; thorace fovea grandi prope angulos posticos, angulis anticis et interdum lateribus ferrugineis, elytris basi intus humeros macula ferruginea majore. Long. 2 lin., lat.  $1\frac{1}{4}$  lin.

Habitat in Macassar, in Pulo Penang et in Celebes.

Very nearly allied to *C. humeralis*. It is usually larger than that species. It is not so convex, and has a squarer and more massive appearance; the head is proportionally not quite so broad. The punctuation throughout is not only coarser, but more frequent and close. The slight depression on the thorax near each of the posterior angles in *C. humeralis* is here a deep, somewhat transverse, coarsely punctate fovea. The elytra are not so convex, are a little flatter on the surface, and have a depression behind the shoulder. The anterior angles of the thorax, and sometimes also the posterior angles, are ferruginous; sometimes also the whole of the sides. The ferruginous spot at the base of the elytra next the shoulder in *C. humeralis* is larger, and extends from the shoulder to the scutellum, and the elytra have sometimes the whole disk rufo-ferruginous or rufo-testaceous; when the insect is fresh and unrubbed there is a fine, sparing, testaceous silky pubescence upon the elytra. Sometimes the insect is wholly black, without any part ferruginous at all, except the legs.

All these differences, it will be seen, are merely differences in degree, and if looked at very strictly would, I think, prevent this being regarded as more than a climatal variety. As, however, it looks distinct, it will probably be practically more serviceable to the entomologist who may not be acquainted with it, if I give it a place as a distinct species, which I do, however, only provisionally and with this explanation.

From Macassar and Pulo Penang, Celebes. Collected by Mr. Wallace.

### 4. CARPOPHILUS ADUMBRATUS. (Plate XXXIII. fig. 5.)

Sat latus, subdepressus, subnitidus, fere glaber, textura dura, punctatus; testaceus, capite, thoracis disco, elytris humeris et apice, et corpore subtus plus minusve obscure fuscis vel nigris. Long.  $2\frac{1}{4}$  lin., lat.  $1\frac{1}{4}$  lin.

Var. *C. conspicuus*. Locis adumbratis vivide nigris.

Habitat in China boreali.

Broad, subdepressed, rather shining, nearly glabrous, with a hard texture, punctate; testaceous, with the head, the disk of the thorax, the shoulders and apex of the elytra, and the underside more or less obscurely fuscous or black. Head thickly punctate, with a somewhat curved impression in front. Antennæ testaceous, with the club obscure. Thorax transverse, broader than long, sparsely punctate, more thickly so on the disk, narrower in front, the sides slightly rounded, with a small impression a little before, and another,

less distinct, a little behind their middle, anterior angles rounded, posterior angles obtuse, base straight; disk bi-impressed on each side a little behind the middle. Scutellum shining, very slightly punctulate towards the base. Elytra a half longer than the thorax, rather strongly and sparsely punctate, more thickly punctured with smaller punctures near the suture; shoulders prominent, sides subparallel, very slightly rounded, the apex truncate almost straight; a fuscous or dark fawn-coloured band stretching across the apex and reaching nearly halfway up the side and a quarterway up the suture, and not so far up between them; sometimes the apical margin of this band is paler. The shoulder has usually a dark curved streak bending backwards and inwards towards the suture; the disk, obliquely from the shoulder to the suture behind the middle, is also dark in some individuals. Abdomen punctate. Prosternum testaceous; mesosternum, metasternum, and abdomen infusate or black. Legs testaceous.

Var. *conspicuus*. The darker parts of this species are usually, as above mentioned, of a dark fawn or fuscous colour; but there is a specimen in Mr. Bowring's collection in which they are wholly black, giving the insect so different an appearance, that I have thought it advisable to record it as a variety under this name.

From North China.

#### 5. CARPOPHILUS DISCOLOR.

(Klug, inedit.); Erichs. notat. sed haud descrip. in Germ. Zeitschr. iv. 256 (1843).

*C. badius* (Dup.).

Oblongo-ovatus, sat latus, parum convexus, nitidus, glaber, punctatus, ferrugineo-piceus, thoracis lateribus dilutioribus. Long.  $1\frac{3}{4}$  lin., lat.  $\frac{5}{6}$  lin.

Habitat in Madagascaria.

Oblong-ovate, broadish, somewhat convex, shining, glabrous, punctate, ferrugineo-piceous. Head distinctly sparsely punctate, very slightly obliquely impressed in front; mouth testaceo-rufous. Antennæ testaceo-rufous, with the club fuscous. Thorax narrower in front than behind, the sides declinate, rounded; anterior angles obtusely rounded, posterior angles obtuse; sparsely punctured on the disk, more thickly towards the sides; apex truncate. Scutellum rounded, smooth, impunctate, except a few indistinct punctures at the base. Elytra scarcely wider than the thorax at the base, not much longer than the thorax, rather convex, the sides declinate and rounded, most so before the middle, the margination strong, and leaving a furrow inside reaching behind the middle, very distinctly punctured; shoulders rather prominent; apex of each elytron truncate obliquely and roundly backwards from the suture. Abdomen convex above, more finely and obscurely punctate, subpubescent. Legs ferrugineo-rufous.

Collected by Goudot in Madagascar, and not very rare in collections.

#### 6. CARPOPHILUS NITIDUS.

Affinis *C. discolori*, parum major, latior, oblongo-ovatus, parum convexus, nitidissimus, punctatus, aterrimus, antennarum basi pedibusque lætè testaceis. Long. 2 lin., lat. 1 lin.

Habitat in Calabaria antiqua.

Allied to *C. discolor*; rather larger, broader, oblong-ovate, convex, shining, punctate, deep black. Head not distinctly punctate, very smoothly subpunctate. Mandibles and palpi black; base of the antennæ clear testaceous. Thorax as in *C. discolor*, but more convex, especially in front, the lateral margin stronger. Elytra broader and less distinctly punctate. Legs clear testaceous. In other respects as in *C. discolor*.

Most readily distinguished from *C. discolor* by the general colour, by the mandibles and palpi being black, and by the clearer pale testaceous legs and base of the antennæ: the punctuation on the head is much finer and closer than on the thorax, while in *C. discolor* it is of the same character.

From Old Calabar. Received from the Rev. W. C. Thomson and placed in the British Museum.

#### 7. CARPOPHILUS RUBIGINOSUS.

Convexus, oblongo-ovatus, subnitidus, confertim punctatus, sparsim pubescens, rubiginosus; thorace utrinque postice profunde foveolato. Long.  $1\frac{1}{2}$ – $2\frac{1}{3}$  lin., lat.  $\frac{4}{5}$ –1 lin.

Habitat in Java.

Convex, oblong-ovate, very thickly punctate, somewhat shagreened, sparsely pubescent, rubiginous. Head even, very little impressed on each side in front. Antennæ rufous, club fuscous. Thorax transverse, much narrower in front than behind, sides gently rounded, broadest part behind the middle; apex emarginate, emargination rounded; anterior angles nearly right angles, posterior angles obtuse; disk convex, coarsely and thickly punctate, in some individuals darker than the rest of the body; there is a short smooth line in front of the scutellum, and a deep fovea on each side towards the posterior angles; base bisinuate; sides deeply margined. Scutellum subpentagonal, apical angles rounded; smooth, except towards the base, which is punctate, pubescent, and darker in colour. Elytra convex, with the sides bulging and rounded, deeply margined, most so towards the base, widest a little before the middle, more pubescent and less coarsely punctate than the thorax; shoulders little prominent, the scutellum and sutural region and the outer margins darker-coloured; apex of each elytron truncate obliquely backwards from the suture, exterior apical angles rounded, sutural apical angles obtuse. Abdomen convex; segments large, except the pygidium, which is smallest. Legs rufous.

From Java. Collected by Mr. Wallace. In the British Museum.

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#### *Species mihi invisa.*

#### 8. CARPOPHILUS CAUDALIS.

Leconte, Proc. Acad. Nat. Sci. Philad. Feb. 1859, 70.

“Elongatus, depressus, piceus, nitidus, subtiliter pubescens, elytris macula magna rubro-testacea triangulari utrinque ornatis, pedibus antennisque rufis, his clava infuscata; abdomine segmentis tribus detectis, segmento quarto paulo longiore. Long.  $1\frac{1}{2}$  lin.

“Habitat in California.

"Elongate, depressed, piceous, shining, finely pubescent. Antennæ rufous, with a dusky club. Thorax short, the sides rounded, rather thickly punctate. Elytra twice as long as the thorax, more strongly margined, punctulate, with a large testaceous-red triangular patch on each side. Abdomen with the last three segments exposed, the fourth segment a little longer. Legs rufous."

Dr. Leconte mentions that this species precisely resembles in colour and sculpture his *C. discoideus*, but differs in the abdomen being much longer, and in having three segments exposed instead of only two. Dr. Leconte suggests that it may be the female of that species. I have not seen it, and have merely reproduced his description. If it has an affinity to *C. discoideus*, it can have little to do with the other species of this subgenus.

From Fort Tejon, Nebraska, in California, &c.

(Subgenus CARPOPHILUS proper.)

Caput oculis modicis. Abdomen segmentis duobus ultimis solum expositis et secundo et tertio cæteris distincte brevioribus.

This subgenus embraces a large number of species, many of which differ considerably in form from each other, and I have broken it up into corresponding sections; but all have the eyes moderate and only the last two segments of the abdomen exposed, and the second and third segment much shorter than the other segments.

SECTION I. Texture hard, shining, and nearly glabrous.

9. CARPOPHILUS MARGINELLUS. (Plate XXXIII. fig. 1.)

Motsch. Etudes Ent. vii. 40 (1858).

Oblongo-ovatus, parum convexus, nitidus, fere glaber, durus, punctatus, tenuiter griseo pubescens, piceo-ferrugineus, disco thoracis et singulorum elytrorum gradatim nigris. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{3}{4}$  lin.

Habitat in India orientali, Taprobana, China, &c.

Oblong-ovate, somewhat convex, shining, almost glabrous, hard in texture, feebly griseo-pubescent, punctate, piceo-ferruginous, the disk of the thorax and of the elytra becoming gradually black. Head bifoveolate in front, punctate. Thorax with the sides nearly straight for the posterior two-thirds of their length, then turned-in in front, apex emarginate, anterior angles declinate, nearly right angles, posterior angles slightly obtuse, sides and base slightly margined, base truncate; a rather deep punctate impression on each side near the posterior angles, the rest of the thorax rather thickly but faintly punctate. Scutellum transverse, pentangular, the base punctate, the apex smooth. Elytra of the breadth of the thorax and continuous with it, punctate; sides parallel and straight when seen from above, seen from the sides inflexed, slightly rounded and margined; base straight, with the humeral angles sharply rectangular; the shoulders close to the side, and within them a slight longitudinal impression; apex obliquely truncate; exterior apical angles rounded. Underside ferruginous, paler than the upper side. Abdomen slightly punctate. There is an appearance of broad faintly-marked axillary pieces on the metathorax of this species, but I regard this only as a resemblance caused

not by a suture but a line. There is no other instance of their occurrence in any of the *Carpophilidæ*. Legs ferruginous.

Not unlike *C. humeralis*, Fab., in appearance, but, besides having only two segments of the abdomen exposed, is smaller, differently punctate, and otherwise distinct.

From the East Indies, Ceylon, Hongkong, &c.

#### 10. CARPOPHILUS RUBESCENS.

Affinis *C. marginello*; oblongo-ovatus, subconvexus, nitidus, durus, fortiter et crebre punctatus, glaber, rubidus, thoracis disco, elytrorum lateribus et abdominis apice saturationibus. Long.  $1\frac{2}{5}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in Borneo.

Allied to *C. marginellus*, but may be at once distinguished from it, independent of its lighter colour, by the absence of the large fovea on each side near the base of the thorax. Oblong-ovate, somewhat convex, shining, of a hard texture, strongly and closely punctate, glabrous, testaceous red. Head not so coarsely punctate as the thorax and elytra, with a small, shallow, round depression on each side at the base of the epistome, the base somewhat darker than the rest. Thorax wider than long, subquadrangular, the posterior two-thirds of the sides nearly straight and parallel, very slightly sinuate, anterior third rounded-in to the anterior angles, which are somewhat obtuse and blunt; the apex is emarginate; the posterior angles obtuse, the sides being turned in at a very short distance before the angle; disk darker than the sides, even, and without depressions, a narrow impunctate elevation in front of the suture; coarsely punctate, punctures round and deep; along the posterior straight part of the sides there is a double longitudinal impression, making a slight fold; base truncate, slightly sinuate. Scutellum rather broad, smooth and shining at the apex, punctate behind. Elytra about a half longer than the thorax, a little wider than its base, subparallel as seen from above, sides gently rounded, shoulders distinct; more finely punctate than the thorax, punctures elongate and aciculate, as if made from behind; suture, base, and sides darker than the disk, the sides nearly black. Abdomen finely and acicularly punctate, the apex of the pygidium above dark. Legs and underside rufous.

Collected at Sarawak in Borneo by Mr. Wallae.

#### 11. CARPOPHILUS CUNEIFORMIS.

Statura *C. marginelli*, dignoscitur thoracis elytris latiore elytris paulo brevioribus et postice angustioribus; subtilius punctatus, thoracis linea marginali basali profundiore et magis extensa. Long. lin., lat. lin.

Habitat in Celebes.

Very like *C. marginellus*. It is darker in colour, being dark piceo-ferruginous, with the head, apex of the thorax, and base and suture of elytra ferruginous. It is more finely punctate (almost acicularly) and more silky. The thorax is more convex, wider, more especially in front, and has the basal marginal line deeper and more extended. The elytra are narrowed posteriorly and bulge out in the middle; their apex is smooth and impune-

tate. Abdomen very finely punctate. Legs ferruginous. The metathoracic axillary piece or line, or the imitation of one, which is present in *C. marginellus*, is here absent, and its place supplied by the small pseudo-axillary piece, formed by the enlargement of the posterior lip of the middle cotyloid cavities, which occurs in several species of the genus.

From Celebes. Collected by Mr. Wallace.

## 12. CARPOPHILUS ANTIQUUS.

Melsh. Proc. Acad. Philad. ii. 105 (1846).

*Cercus punctulatus*, Melsh. ibid. ii. 104.

Colore et textura *C. marginello* Er. haud dissimilis: forma differt; oblongus, parum depressus, nitidus, durus, fere glaber, leviter punctatus, saturate castaneus, thoracis disco elytrorumque apice piceo-brunneis; tibiis posticis abrupte dilatatis, dilatatione parallela. Long.  $1\frac{1}{3}$  lin., lat.  $\frac{3}{4}$  lin.

Habitat in America boreali.

Something like *C. marginellus* in colour and texture. Oblong, somewhat depressed, shining, hard, nearly but not quite glabrous; the pubescence sparse, fulvous, and almost confined to the abdomen; lightly punctate, of a dark chestnut colour, with the disk of the thorax and the apex of the elytra gradually becoming piceo-brunneous or black. Head sparingly and lightly punctate, very faintly bi-impressed in front. Thorax broader than long, nearly equal in breadth in front and behind, sides slightly rounded, rather deeply margined, the margination narrowest about the middle; apex scarcely emarginate, anterior angles obtuse, rounded, posterior angles obtuse, base truncate; very finely and not closely punctate, a depression close to the side before the posterior angle somewhat more deeply punctate. Scutellum with a very few punctures towards the base. Elytra about the same breadth as the thorax, more deeply punctate than it, most punctate at a longitudinal depression near the scutellum on each side of the suture, with the sides nearly straight, slightly rounded, margined, and canaliculate, slightly attenuated towards the apex, which on each elytron is truncate obliquely backwards from the suture; exterior apical angles acute and rounded, sutural angles obtuse; shoulders not prominent. Abdomen very finely punctate and pubescent. Legs obscure ferruginous; posterior tibiæ with their apical half abruptly dilated, the dilatation parallel.

From Tennessee and the neighbouring districts of North America.

## 13. CARPOPHILUS FERRUGINEUS.

Oblongus, parum latus, depressus, durus, nitidus, glaber, punctatus, læte ferrugineus; tibiis posticis dilatatis, sed dilatatione haud parallela. Long.  $1-1\frac{1}{3}$  lin., lat.  $\frac{3}{5}$  lin.

Habitat in Mexico.

Oblong, rather broad, depressed, hard, shining, glabrous, punctate, light ferruginous. Club of the antennæ fuscous. Head very sparingly and very lightly punctate, impressed on each side in front. Thorax transverse, with the sides subparallel, very slightly rounded, very lightly and sparingly punctate, not more thickly upon the sides than on

the disk; sides deeply margined, the margination not narrowest in the middle, widest and deepest at the posterior angles; anterior angles rounded, posterior angles obtuse. Scutellum scarcely punctate. Elytra about as wide as the thorax, a half longer, the sides subparallel, rather strongly and sparsely punctate; apex declinate, and each elytron obliquely truncate; apex and suture sometimes becoming gradually blackish. Abdomen with its segments pubescent. Posterior tibiæ dilated, but not parallelly.

Allied to *C. antiquus*. Smaller, more depressed; thorax not wider than the elytra, and more parallel than in that species. The colour is usually wholly bright ferruginous, although in some specimens it is gradually darker towards the apex and suture. The posterior tibiæ, although dilated at the apex, have not the abrupt, flat, parallel dilatation from its middle which there is in *C. antiquus*.

From Mexico. Collected by M. Sallé.

#### 14. CARPOPHILUS SUCCISUS.

Erichs. in Germ. Zeitschr. iv. 259 (1843).

*C. pinguis* (Mus. Berol.).

*C. Catharinensis* (Deyr.).

Subdepressus, niger, subnitidus, tenuissime pubescens; pedibus rufo-testaceis; elytris fuscis, parce subtiliterque punctatis, lateribus subtilissime rugulosis. Long.  $1-1\frac{1}{4}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in Columbia.

Short, broad and parallel, oblong, subdepressed, above nigro-piceous, fusco-piceous, or chestnut, somewhat shining, texture hard, rather deeply punctate, slenderly clothed with a very short and fine pubescence. Antennæ ferruginous, with the club piceous. Mouth rufo-piceous. Head closely punctate, lightly foveolate on each side in front. Thorax of the breadth of the elytra, subquadrate, very slightly narrowed in front, punctate, with the disk smoother, the base as well as the sides margined, the sides a little rounded, reflexed; anterior angles declinate, somewhat rounded and obtuse; posterior angles obtuse. Scutellum smooth, very faintly punctulate at the base. Elytra a half longer than the thorax, fuscous, more thickly but more faintly punctate than the thorax, acutely margined on the sides, very faintly rugulose towards the sides. Abdomen densely punctate, with the segments margined with piceous. Body below piceous. Legs rufo-testaceous.

The texture of this species is softer than that of the preceding, and approaches that of *C. sexpustulatus*. It has some resemblance to small specimens of *C. marginellus*, but, besides various other differences, it is more quadrate in form, and has not the appearance of metathoracic axillary pieces which that species possesses. The thorax has a harder and more shining appearance than the elytra; and these have a somewhat leathery and dull appearance, besides being softer. Erichson says it is similar in appearance to *C. dimidiatus*; but this is only a superficial resemblance. Its thorax is shining and with only a few unobtrusive scattered hairs, in place of being dull and thickly punctate and with an almost villose pubescence.

From South America. Its chief metropolis seems to be Columbia, but it extends considerably further both to the south and to the north.

SECTION II. Texture moderately soft and slightly shining. Body depressed. Elytra not twice as long as the thorax, moderate in size\*.

### 15. CARPOPHILUS CORTICINUS.

Erichs. in Germ. Zeitschr. iv. 263 (1843).

Oblongus, subdepressus, subtiliter punctatus, testaceus, piceus vel magis minusve brunneus; thorace elytrisq. fortius marginatis, elytris ad basin latioribus. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{3}{5}$  lin.

Habitat in America boreali.

Oblong, subdepressed, testaceous, piceous, or chestnut, very little shining, faintly and slenderly griseo-pubescent. Antennæ with the club fuscous. Head faintly punctate, subimpressed on each side in front. Thorax of the breadth of the elytra, scarcely narrower in front, emarginate at the apex, subsinuate on each side of the base, a little rounded at the sides, all the angles sub-right-angles; rather densely punctate, with the disk depressed, the lateral margin distinct and reflexed. Scutellum thickly and faintly punctate. Elytra oblong, a half longer than the thorax, faintly but more densely punctate than the thorax, with the lateral margin very distinct, reflexed. Abdomen faintly punctate, the pygidium longitudinally impressed.

This species has considerable relation to the genus *Epurea*. Not only does its general appearance suggest its connexion with it, but its texture is that of an *Epurea*, and it undoubtedly is one of the links which connect *Carpophilus* with that genus.

From North America.

### 16. CARPOPHILUS COMPRESSUS.

*C. corticino* affinis; minor, magis depressus, magis opacus, thorace parum brevior, lateribus minus rotundatis et levius marginatis; cæteris ut in *C. corticino*. Long.  $1\frac{1}{5}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in Rio Janeiro.

Very closely allied to *C. corticinus*. A larger series of specimens (I have only seen one) may show that they are the same species. It is a good deal (nearly a third) smaller than *C. corticinus*, rather more depressed, more opaque, more pubescent; the thorax seems a little shorter or more transverse, its sides are somewhat straighter, the margins not so well marked. The elytra seem not quite so much attenuated behind. In other respects there is little or no difference between it and *C. corticinus*.

From Rio Janeiro. Collected by the Rev. Hamlet Clark.

### 17. CARPOPHILUS LIGNEUS.

Oblongus, subdepressus, punctatus, parce testaceo pubescens, castaneo-brunneus; elytris testaceo-rufis, circa scutellum saturationibus; abdomine nigro-piceo; antennis pedibusque castaneo-piceis. Long.  $1\frac{1}{3}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in Mexico.

\* This section is related to that immediately preceding on the one hand, and to the section *Ecnomorphus* on the other, but I have separated it from the latter in order to form the transition to the following Sections III., IV., &c.

Oblong, subdepressed, punctate, somewhat shining, sparingly testaceo-pubescent, chestnut-brown. Head with a very deep fovea on each side, slightly connected together behind the epistome, which is prominent. Thorax piceous chestnut, broader than long, with the disk flat and depressed, faintly transversely impressed, the anterior angles nearly right angles, with the point rounded, the posterior angles obliquely cut off and the points rounded, base straight, truncate; very finely punctate and more shining than the elytra and scutellum. Scutellum rounded, punctate. Elytra nearly a half longer than the thorax, broader at the base than the base of the thorax, but scarcely broader than its sides, rather thickly punctate, testaceo-rufous, darker near the scutellum and base, the shoulders prominent and paler in colour, another raised larger prominence near the apex of the scutellum, the suture darker in colour, sides sharply rounded immediately behind the shoulder, slightly so afterwards, apex of each elytron obliquely truncate. Abdomen nigro-piceous, pubescent, and punctate. Legs castaneo-piceous.

Like *C. corticinus* in colour, but of a firmer consistency, and readily distinguished from it by the posterior angles of the thorax being obliquely cut off, which is not the case with *C. corticinus*. It is a question whether it has not more natural affinity with the section *Ecnomorphus*, in which the elytra are wider at the base than the thorax, than with this. It may find a place in either; and in the dichotomous Table of the species given at the end of this genus I have placed it in that section. The coloration on the elytra near the scutellum sometimes varies into two spots darker than the rest.

From Nicaragua in Mexico. Collected by M. Sallé.

#### 18. CARPOPHILUS FULVIPES.

Motsch. Etud. Ent. vii. 42 (1858).

*C. fuscus*, Motsch. Etud. Ent. vii. 42 (1858).

Oblongus, depressus, postice attenuatus, subtiliter granulatim punctatus, subnitidus, niger vel fusco-niger, ore pedibusque fulvo-testaceis. Long.  $1\frac{1}{5}$ – $1\frac{4}{5}$  lin., lat.  $\frac{1}{2}$ – $\frac{2}{3}$  lin.

Habitat in Taprobana.

Oblong, depressed, narrowed behind, finely punctate, slightly shagreened, somewhat shining, black or blackish brown. Head rounded, with a broad impression on each side in front, finely and equally punctate. Antennæ black. Mouth fulvo-testaceous. Thorax transverse, slightly convex, flattish on the disk, on which is a longitudinal smooth line in front of the scutellum; sides gently rounded, declinate towards the anterior angles, which are obtuse; apex scarcely emarginate; posterior angles almost right angles, very slightly obtuse, and with the margin very slightly reflexed; base truncate, slightly bisinuate. Scutellum triangular, with a slightly raised smooth space on each side, punctate in the middle. Elytra depressed, of the breadth of the thorax, quadrate, slightly narrowed behind, impressed behind the scutellum, punctate; sides declinate and slightly rounded, margined and canaliculate; apex obliquely truncate; exterior apical angles rounded, sutural obtuse. Abdomen attenuate, finely punctate. Legs fulvo-testaceous.

M. de Motschulsky gives this as one of the types of the subgenus *Ecnomorphus*, which he proposes for the reception of those species which are like *C. sexpustulatus*. I admit that such a subdivision is warranted; but this species does not belong to it. It has not

the characters which he assigns to that section, but belongs to the section of normal *Carpophili*, such as *C. hemipterus*, &c. He figures and describes the anterior tarsi as bearing below long claviform hairs. It does not quite appear whether in this he refers to both sexes or only to the male. He has been speaking previously of the male, and, although the sentence is separated by a semicolon, he may still refer to it. If he refers to both sexes, then I can assure him he is mistaken. I have examined, under high powers, the tarsi of a female which he was kind enough to present to me, and can say with perfect confidence that the hairs under its anterior tarsi in no respect differ from the usual form of hairs. The appearance he has figured is so unusual that I cannot help thinking that he has been deceived by some adhesion of gum or other extraneous body. In like manner, his characters drawn from the club of the antennæ are due to an accidental displacement of the articles from their proper position. (See my remarks upon the characters of the section *Ecnomorphus*, postea.)

M. de Motschulsky has also briefly noticed another species which he considers closely allied to this, and perhaps only a variety. I have not seen it; but as the only characters he gives to distinguish it from *C. fulvipes* are that it is smaller, browner, and with the posterior angles of the thorax slightly reflexed—this last being a character which is also found in *C. fulvipes*,—I have been unable to see any ground for constituting it even a variety. Still I should have done so, in deference to the opinion of M. de Motschulsky, had it not been for the doubt which he himself expresses as to its distinctness; for although his descriptions are often insufficient to warrant his conclusions, I render full justice to the *flair entomologique* by which he often instinctively separates nearly allied species from each other.

From Ceylon.

#### 19. CARPOPHILUS PLANATUS.

Parvus, subfusiformi-oblongus, depressus, subnitidus, punctatus, griseo subpubescens, niger, ore, antennis pedibusque ferrugineis; thorace utrinque bi-impresso, angulis omnibus rotundatis. Long.  $1\frac{1}{3}$  lin., lat.  $\frac{3}{5}$  lin.

Habitat in Victoria in Australia.

Small, subfusiformly oblong, depressed, somewhat shining, punctate, griseo-subpubescent, black. Head very lightly punctate, almost smooth, with a curved impression in front. Mouth and antennæ ferruginous. Thorax a half broader than long, narrower in front than behind, on each side towards the posterior angles rather deeply impressed, the disk flat and subimpressed on each side, all the angles rounded, the base as well as the sides distinctly margined; thickly punctate, the disk a little smoother. Scutellum punctate. Elytra nearly a half longer than the thorax, thickly punctate at the base, scarcely punctate at the apex, griseo-pubescent, especially at the base, the disk depressed and impressed, apex narrowly declinate, truncate scarcely obliquely, sides almost straight and parallel, slightly rounded at the humeral angle, exterior apical angle rounded, sutural angle nearly a right angle. Abdomen, especially pygidium, finely nigro-pubescent, penultimate segment shining. Legs ferruginous.

From Victoria in Australia.

SECTION III. Body elongate and depressed, with the surface of the thorax as if a roller had passed over it; above the medium size. Texture more or less shining, shagreened.

20. CARPOPHILUS LACERTOSUS.

Punctatus, parum pubescens, niger, elytris purpureo-brunneis; thorace angulis posticis obtusis, basi bisinuato; elytris alutaceis; pedibus piccis. Long.  $1\frac{1}{4}$  lin., lat.  $\frac{3}{4}$  lin.

Habitat in Venezuela.

Elongate, subfusiform, thickly but not very deeply punctate. Head bi-impressed on the margin in front. The mandibles and other parts of the mouth piceo-ferruginous. Thorax transverse, and not much narrower in front than behind; the sides form an equal curve; the anterior angles are rounded, and the posterior obtuse; base bisinuate. Scutellum black, broadly triangular. Elytra slightly widest behind the middle, once and a half the length of the thorax, finely punctate and pubescent; apex of each elytron very obliquely truncate. Abdomen somewhat shining, finely punctate. Legs piceous.

This species has considerable resemblance to *C. lugubris* in the next section, but it is depressed and flattened on the back, has not the dark pubescence which is on it, and is without the rufous margins of the thorax and the rufous spot on the shoulders of the elytra. It is also narrower, the elytra are purple-brown, and their texture is somewhat leathery.

From Venezuela and the neighbouring parts of South America. Apparently not rare.

21. CARPOPHILUS PURPUREIPENNIS.

*C. lacertoso* valde affinis; paulo major et fortius punctatus; thorace antice angustiore, margine piceo; elytris purpureo-nigris, humeris interdum piceis. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{4}{5}$  lin.

Habitat in Venezuela.

This is very near to *C. lacertosus*, and is possibly only a variety of it. It is a little larger and more deeply punctate (as is usually the case with larger specimens). The thorax is narrower in front and has its margin piceous. The elytra are purplish black; the shoulders in some instances piceous.

From Venezuela.

22. CARPOPHILUS RUFITARSIS.

Oblongo-ovatus, latus, sat depressus, subtiliter crebre punctatus, nitidus, niger, tarsis rufis. Long.  $2\frac{1}{3}$  lin., lat. 1 lin.

Habitat in Guatemala.

Large, oblong-ovate, broad, depressed, faintly thickly punctate, very shining for this group, black. Head bi-impressed at the sides near the eyes in front. Antennæ nearly twice the length of the head, slender, basal joints piceous, club elongate conical. Thorax narrower in front than behind, apex slightly emarginate, the sides lightly rounded, the anterior angles rounded, the posterior obtuse, base sinuate near the angles, the middle gently rounded, extending broadly a very little further back than the angles; disk smooth, broad, and lightly thickly punctate, the punctures coarser towards the sides, and more

particularly in a rather deep impression close to the sides a little behind the middle. Scutellum broad, transverse, triangular, more finely punctate than the thorax. Elytra broader at the base than the thorax, longer than the thorax, together broader than long, irregularly faintly punctate, and with some slight depressions here and there on the disk; shoulders rather prominent, sides strongly margined and deeply canaliculate, rounded, more sharply in front and behind than in the middle; apex of each elytron obliquely truncate; exterior apical angles obtuse, rounded; sutural angles obtuse. Abdomen very faintly thickly punctate. Below thickly punctate. Tarsi rufous.

From Guatemala. Collected by M. Sallé.

SECTION IV. Body more or less elongate, subdepressed, thorax not flat; above the medium size. Texture shagreened, very thickly pubescent, and opaque. Colours black and sombre.

### 23. CARPOPHILUS LUGUBRIS.

Subdepressus, subopacus, dense punctatus, griseo pubescens, sordide niger; thorace margine rufescente; elytris humero obscure ferrugineo; pedibus piceis. Long.  $1\frac{2}{3}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in America boreali et in America meridionali.

Subdepressed, subopaque, densely punctate, griseo-pubescent, rather dirty-looking black. Head very thickly punctate, with an impression on each side in front. Antennæ piceous, with the club black. Labrum piceous. Thorax slightly convex, a little narrower than the elytra, rather narrower in front than behind, anterior angles obtuse, posterior somewhat obtuse and very slightly looking back, the sides turned-in at the angles; rounded on the sides, which are griseo-pubescent, and somewhat expanded, translucent, and rufescent, especially towards the posterior angles; margined, the edging of the margins reflexed. Scutellum thickly punctate. Elytra almost a half longer than the thorax, scarcely wider than the thorax at their base, the sides rapidly widened near the base, and then not much more widened afterwards; sides scarcely rounded, except at the base and the apex, and there only slightly; densely and faintly punctate, black, the shoulders obscurely ferruginous, slightly nigro-pubescent, at the base clothed with a denser griseous pubescence; slightly convex behind, rather flat on the disk; apex of each elytron obliquely truncate; exterior apical angles rounded, sutural obtuse. Abdomen more finely punctate, lightly griseo-pubescent, with the segments margined with piceous. Legs piceous.

Easily distinguished from its allies, *C. niger* and *C. lacertosus*, by the margin and the posterior angles of the thorax, as well as the shoulders of the elytra, being rufescent.

From various parts of North and South America, such as Venezuela, Caraccas, Florida, &c.

### 24. CARPOPHILUS BREVIPENNIS.

Blanchard, in D'Orbigny's Voy. dans l'Amér. Mérid. vi. 2. Ins. (1837-43).

Subdepressus, opacus, crebre punctatus, pubescens, niger; thorace fovea majore utrinque prope sed pone medium, foveaque minore utrinque, his exterioribus; elytris piceo-

nigris, basi et callo humerali tenuiter obscure ferrugineis; ore, antennis (clava fusca excepta) pedibusque ferrugineo-piceis. Long. 2 lin., lat.  $\frac{3}{4}$  lin.

Habitat in Peruvia.

Rather large, subdepressed, opaque, densely pubescent and closely punctate, black. Head with a semicircular line between the anterior inner corners of the eyes. Thorax more coarsely punctate than the head, rather broader than long, narrower in front than behind, the sides rounded-in anteriorly, anterior angles rounded, posterior obtuse, depressed on the disk, with a large shallow fovea on each side of and a little behind the middle, exterior to that a smaller and shallower depression, and close to and along the slightly raised margin another depression about one-third from the front, and another narrow depressed line or gutter near the posterior angles, base bisinuate, posterior angles pointing backwards. Elytra rather wider than thorax, piceous black, with the humeral callus and the base narrowly obscurely ferruginous; exterior apical angle rounded. Mouth, base of antennæ, and legs ferrugineo-piceous.

From Peru. In the collection of the Jardin des Plantes.

## 25. CARPOPHILUS NIGER.

Erichs. in Germ. Zeitschr. iv. 263 (1843).

*Cercus niger*, Say, Journ. Acad. Nat. Sc. Philad. iii. 195. 2.

Latus, parum opacus, subdepressus, niger, griseo pubescens, punctatus; thorace lateribus minus rotundatis, margine irregulari fere serrato, repando, angulis posticis obtusis; elytris disco et pone humeros impressis. Long. 2-2 $\frac{3}{4}$  lin., lat. 1-1 $\frac{1}{4}$  lin.

Habitat in America boreali.

Broad, subdepressed, black, nearly opaque. Antennæ piceous, the club black. Labrum piceous. Head thickly punctate, impressed on each side in front. Thorax a little narrower than the elytra, narrowed in front, rounded on the sides, very closely strongly punctate, behind lightly bi-impressed on each side, with the disk black, the sides griseo-pubescent, the lateral margin rufescent, reflexed, slightly expanded, and the edge irregular, almost faintly serrate; both anterior and posterior angles obtusely rounded. Scutellum thickly punctate. Elytra almost a half longer than the thorax, densely and faintly punctate, slenderly nigro-pubescent, clothed at the base with a thicker griseous pubescence. Abdomen faintly punctate, slightly griseo-pubescent, with the segments margined with piceous. Legs piceous.

This species may be distinguished from *C. lacertosus* by its greater size, and by the sides of the thorax being less declinate and less rounded, and by its margins being piceous and translucent. It is distinguished from *C. lugubris* by its posterior angles being gently obtuse; from *C. rufimanus*, to which it approaches nearest in point of size, by its coarser punctuation and pubescence; and from both *C. lugubris* and *C. brevipennis* by its non-ferruginous shoulders. The coarse punctuation on the thorax makes its edges almost serrate. There is a small metathoracic axillary piece, which is smoother than the neighbouring surface, and slightly punctate in the centre.

From North America, where it appears to be pretty extensively distributed.

## 26. CARPOPHILUS TRITON.

Affinis *C. niger*; grandis, oblongo-ovatus, subdepressus, subopacus, crebre granulose punctatus, griseo pubescens, nigro-fuscus; antennis, ore, thoracis lateribus pedibusque rufescentibus, thoracis margine fere lævi. Long.  $2\frac{1}{2}$  lin., lat.  $1\frac{1}{4}$  lin.

Habitat in Sunggari.

Nearly allied to *C. niger*. Large, subdepressed, sloping slightly to each side as from a longitudinal ridge in the line of the suture, oblong-ovate, subopaque, thickly granulosely punctate, griseo-pubescent, brownish black. Head deeply bi-impressed in front; antennæ, mandibles, and other parts of the mouth rufescent, club of the antennæ darker. Thorax transverse, nearly twice as broad as long, narrower in front than behind, unequal, the sides in the middle nearly straight, and turning in with a short curve to the posterior angles, in front of which is a marginal depression, and with a larger and more gentle curve to the anterior angles; rather expanded, rufescent, and with a marginal channel (widest at the posterior angles) formed by the raised edging of the margin; edge of margin almost smooth, very slightly irregular towards the anterior angles, which are obtuse; apex emarginate, the emargination curved; posterior angles obtuse; base subsinuate, with a curved depression from nearly the middle of the base to the front of the posterior angles; disk raised, and somewhat irregularly depressed in the middle, the sides sloping from the disk. Scutellum transverse, rounded. Elytra a half longer than the thorax, at the base wider than the thorax, slightly widened about the middle, sides rounded and margined, shoulders prominent and with a slight tendency to rufescence, and a slight elevation behind obliquely towards the suture; apex of each elytron truncate obliquely, margin of the apex rufescent. Exposed portion of the abdomen fully longer than the thorax, margins of the segments rufescent; the surface more finely punctate and pubescent than the rest, assuming a more finely shagreened appearance. Legs rufescent.

This species is very closely allied to the *C. niger* of North America. It is larger, fuscous instead of deep black, with the margins of the thorax, antennæ, and legs rufescent. In *C. niger* the sides of the thorax are straighter, more parallel, and less rounded-in at the posterior angles. It is the Asiatic representative of that species, and perhaps scarcely entitled to a place as a distinct species.

From Sunggari. I owe this species to M. Obert, of St. Petersburg, from whom I have received many interesting species from the interior of Siberia.

SECTION V. Body broad and convex, and with the thorax separately convex. The fimbriæ usually more developed than in most of the other species. Colours black and sombre.

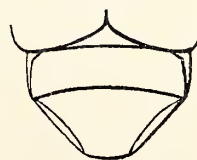
## 27. CARPOPHILUS MORIO (Klug).

*C. nigerrimus* (Dup.).

Latus, depressus, niger, subopacus, crebre punctatus, breviter nigro pubescens; thorace convexo, disco postice depresso, linea brevi longitudinali lævi ante scutellum, angulis anticis rotundatis; elytris planis, lateribus rotundatis. Long.  $2\frac{1}{3}$  lin., lat. 1 lin.

Habitat in Madagascaria.

Fig. 95.



Broad, depressed, black, densely punctate, rather dull, with short black pubescence. Head with a semicircular line drawn between the anterior margins of the eyes; antennæ black. Thorax nearly twice as broad as long, widest before the middle, sides somewhat parallel until about a third from the front, when the anterior angle is rounded in, making the thorax a good deal narrower in front than behind, convex in front, flat on the posterior part of the disk, the posterior half of which is surrounded by an oblique curved impression, and on this flat circular space is a slight, smooth longitudinal line in front of the scutellum; sides with a distinct, raised, reflexed margin; base sinuato-truncate; anterior angles rounded, posterior angles obtuse and slightly turned back. Scutellum transversely triangular, with a narrow shining margin. Elytra flat, not raised towards the suture, duller and more pubescent and a little longer than the thorax, humeral angles not rounded, but terminating in a point, sides deeply margined; apex very obliquely truncate, exterior apical angles rounded, sutural apical angles obtuse. Abdomen with the penultimate segment more shining and less punctate on the disk than on the sides. Underside coarsely punctate and with a griseous pubescence. Legs slightly piceous.

This species might have a place in the previous section, for it is somewhat depressed and elongate, and not unlike *C. niger*, but smaller and shorter. It is, however, still more nearly allied to the convex broad species, and therefore I have put it at their head, indicating its affinity to the previous section while retaining it in this.

From Madagascar.

## 28. CARPOPHILUS FUNEREUS.

*C. Morioni* affinis; sat convexus, fortiter punctatus, dense pubescens, opacus, niger; thorace antice angustiore, angulis anticis obtusis, haud rotundatis; pedibus piceis.

Long.  $1\frac{3}{4}$  lin., lat.  $1\frac{1}{8}$  lin.

Habitat in Taprobana.

Moderately convex, very deeply and thickly punctate, densely pubescent, opaque, black. Head very slightly bi-impressed in front; antennæ black. Thorax narrowed in front, widest behind the middle, sides deeply margined, gently rounded, curved rapidly in at the posterior angles, which are obtuse and slightly turned back; anterior angles obtuse, not rounded; base deeply bisinuate; there is no dorsal line on the disk. Scutellum transverse, subpentangular, finely punctate. Elytra about once and a half the length of the thorax, with the sides deeply margined, especially towards the base, and declinate; when viewed from the side they are seen to be widest immediately behind the shoulder; truncation of apex moderately oblique. Abdomen finely punctate and pubescent. Legs piceous; tarsi rufous.

This species is similar to *C. Morio*, but is easily distinguished by the thorax being widest behind the middle instead of before the middle, and by its anterior angles being simply obtuse instead of rounded. The punctuation is very close and fine, giving it a dull, opaque, and sombre appearance.

Found by Mr. Templeton or Colonel Champion in the island of Ceylon, and now in the collection of the University of Oxford.

## 29. CARPOPHILUS TRISTIS.

Erichs. in Germ. Zeitschr. iv. 264 (1843).

*C. nigro* paulo brevior et magis depressus, latus, niger, opacus, nigro pubescens; thoracis margine lato, repando; elytris alutaceis; pedibus piceis. Long.  $1\frac{2}{3}$  lin., lat. 1 lin.

Habitat in Brasilia.

Black, opaque, nigro-pubescent. Antennæ black, with the base piceous. Head closely punctate. Thorax of the breadth of the elytra, slightly rounded on the sides, densely and rather deeply punctate, equal, with a broad reflexed lateral margin faintly expanded; anterior angles pointed, obtuse; posterior angles obtuse at the very angle; base truncate, not sinuate. Scutellum thickly punctate. Elytra a half longer than the thorax, leathery in appearance, faintly punctulate. Abdomen faintly punctate. Legs piceous.

The leathery texture of the elytra furnishes a good character for distinguishing this from any allied species that are likely to be confounded with it.

From Brazil.

## 30. CARPOPHILUS TECTUS.

*C. Morioni* affinis; latus, fusiformis, subconvexus, subnitidus, crebre punctatus, parce et breviter nigro pubescens, niger, antennis pedibusque rufo-testaceis; thorace elytrisque utrinque leviter obliquantibus ut tectis. Long. 2 lin., lat. 1 lin.

Habitat in Borneo et Singapore.

Like *C. Morio*. Broadly fusiform, subconvex, very slightly shining, thickly punctate, sparingly clothed with a short black pubescence. Black; antennæ rufo-testaceous, club darker. Head slightly punctate, very slightly bifoveolate on each side of the base of the epistome, which is punctate; mouth piceous. Thorax somewhat convex, with a tendency to a ridge behind, which culminates in a smooth narrow longitudinal line in front of the scutellum; sides gently rounded, widest immediately before the posterior angles, which are obtuse and slightly looking back, slightly margined; anterior angles obtusely rounded; apex slightly emarginate, base bisinuate, middle more produced than the sides. Scutellum transversely pentagonal, declinate in front, punctate, smooth at the apex. Elytra usually highest at the suture, each elytron sloping a little from it, sides straightly declinate, rounded, margined and canaliculate; thickly punctate and pubescent, smoother towards the suture; the humeral angles not rounded, but terminating in an obtuse point; exterior apical angles rounded, apex obliquely truncate; sutural angles slightly obtuse. Abdomen very finely punctate and pubescent. Below punctate and pubescent. Legs rufo-testaceous.

Collected by Mr. Wallace at Sarawak and Singapore.

## 31. CARPOPHILUS FLAVIPES.

*C. tecto* affinis; minor, convexus, crebre et fortiter punctatus, nigro pubescens, subopacus, niger, antennarum basi testaceo-picea, pedibus flavo-testaceis. Long.  $1\frac{1}{3}$  lin., lat.  $\frac{3}{5}$  lin.

Habitat in Celebes et Singapore.

Allied to *C. tectus*. Smaller, convex, thickly punctate, nigro-pubescent, somewhat opaque, black, with the legs testaceous yellow. Head scarcely impressed in front, with the mouth and the base of the antennæ testaceo-piceous. Thorax very convex, very coarsely punctate and slightly pubescent, and with a small fovea on each side of the middle near the scutellum, and a larger one more towards the posterior angles; narrower in front than behind, with the sides rounded, but seen from above nearly parallel for its posterior half, with the remainder in front rounded; the apex scarcely emarginate, anterior angles slightly obtuse, posterior angles more so, base bisinuate. Scutellum pentagonal, punctate towards the base. Elytra very convex, punctate, but not so coarsely or thickly as the thorax, more pubescent, sides rounded, shoulders prominent, apex of each elytron truncate obliquely, exterior apical angles rounded, sutural angles obtuse. Abdomen convex. Body not so coarsely punctate below as above. Legs flavo-testaceous.

This is very near to *C. tectus*; but its smaller size, greater convexity, and the thorax less produced behind induce me to treat it as a distinct species.

From Singapore, and Macassar in Celebes. Collected by Mr. Wallace.

### 32. CARPOPHILUS VARIOLOSUS.

Convexus, late ovatus, subopacus, confertissime punctatus, nigro pubescens; niger, antennis piceis, clava fusca, tarsi piceis; capite, thorace elytrisq. variolose punctatis.

Long.  $1\frac{3}{4}$  lin., lat. 1 lin.

Habitat in Sarawak.

Convex, broad-ovate, subopaque, thickly punctate, nigro-pubescent, black. Head thickly variolose punctate, largely, rather deeply, and obliquely impressed on each side in front. Antennæ nearly twice the length of the head, piceous, with the club fuscous; club broad, much compressed. Thorax transverse, convex, sides rounded slightly for the posterior two-thirds, considerably for the anterior third; apex emarginate, emargination round; anterior angles declining, nearly right angles, posterior angles very obtuse; base truncate, very slightly sinuate towards the angles; very coarsely and thickly punctate, the punctures variolose, giving the surface a more than usually shagreened appearance; the convexity of the thorax regular and without impressions; the pubescence scarce and brownish black. Scutellum rounded, finely punctate and pubescent. Elytra convex, scarcely broader at the base than the thorax, wider in the middle, sides rounded and margined, humeral angle pointed, shoulder placed a little back, exterior apical angle rounded, sutural very slightly obtuse; apex of each elytron obliquely truncate; rather thickly punctate and pubescent. Abdomen finely punctate and pubescent. Below punctate. Legs black, tarsi piceous.

The variolose and coarse punctuation is a ready character for distinguishing this species. When examined under the microscope the punctures are seen to be variolose, or flat at the bottom like a rain-drop on sand. This pitting, however, is not visible with an ordinary lens, either in this species or in any other species where it occurs; it requires a higher power to make it visible.

From Sarawak. Collected by Mr. Wallace.

## 33. CARPOPHILUS OBESUS.

Convexus, oblongo-ovatus, grossus, parum nitidus, punctatus, niger, antennarum basi picea; thorace valde convexo, marginato, margine canaliculato; elytris convexis, pone humeros impressis, lateribus marginatis et profunde canaliculatis. Long.  $1\frac{2}{3}$  lin., lat.  $\frac{7}{8}$ – $1\frac{1}{8}$  lin.

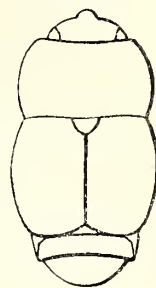
Habitat in insulis Aru et Dorey in Nova Guinea.

Convex, large and obese-looking, oblong-ovate, somewhat shining, punctate, black, and nigro-pubescent. Antennæ with the base piceous. Head with a more or less distinct semicircular depression at the base of the epistome, and a slight fovea at each end of it, finely and rather thickly punctate. Thorax transverse, very convex, not much narrower in front than behind, when viewed from above with the sides nearly straight, but actually rounded, widest behind, margined; anterior angles rounded, posterior obtuse, apex scarcely emarginate; thickly punctate, more faintly on the disk, rather coarsely towards the sides; base bisinuate, the middle broad, slightly raised, and reaching further back than the sides, with a smooth narrow dorsal line extending a short distance forward in front of the scutellum, and a rounded depression on each side from the base to the sides. Scutellum rather large, rounded, finely punctate at the base, apical margin smooth. Elytra longer than the thorax, not quite so long as head and thorax, convex, with a large depression behind the shoulders, which are rather prominent; sides rounded, widest in the middle, margined, deeply canaliculate, apex obliquely truncate, exterior apical angle rounded, sutural obtuse. Pygidium convex, faintly punctate, and with longish pubescence. Fimbriæ distinct.

From the Aru Islands, and the island of Dorey, New Guinea. From Mr. Wallace.

The specimens from the island of Dorey, one of the New Guinea Islands, are less convex and a little less punctate than the specimens from the Aru Islands.

Fig. 96.



## 34. CARPOPHILUS PUNCTICEPS.

Oblongo-ovalis, convexus, subnitidus, punctatus, breviter et parce nigro pubescens, niger; thorace rotundato et convexo; elytris convexis, sutura leviter elevata, utrinque prope suturam impressione longitudinali subparallela medio latiore instructa. Long.  $1\frac{3}{4}$  lin., lat.  $\frac{3}{4}$  lin.

Habitat in Calabaria antiqua in Africa occidentali.

Oblong-oval, convex, somewhat shining, punctate, sparingly clothed with short black pubescence, black. Head strongly and densely punctate, the epistome less punctate; antennæ black. Thorax rotundate and convex, strongly punctate, the disk more sparingly so, with a faint dorsal posterior raised line, the sides rounded, all the angles obtuse, the base bisinuate. Scutellum broad, rounded. Elytra lightly punctate, convex, with the suture slightly raised, and on each side with a subparallel longitudinal impression broadest in the middle; the sides rounded, rather deeply margined, the apex of each elytron rounded, the sutural apical angles obtuse, the exterior apical angles rounded. Pygidium convex, very faintly punctate. Legs piceous.

From Old Calabar. I have received a pair of this species from the Rev. W. C. Thomson.

## 35. CARPOPHILUS HOFFMANSEGGII.

*C. obeso* valde affinis; thoracis clytrorumque marginibus minus reflexis. Long.  $1\frac{1}{2}$  lin., lat. 1 lin.

Habitat in Madagascaria?

Very closely allied to *C. obesus*; may be distinguished by the margins of the thorax and elytra being less reflexed.

There are two specimens of this insect in the Berlin Museum. But my detailed description and note of the locality has fallen aside; I have a vague impression that it is from Madagascar.

SECTION VI. Body convex and fusiform. Texture so closely punctate as to appear shagreened.

Elytra with paler spots or markings.

## 36. CARPOPHILUS HEMIPTERUS. (Plate XXXII. fig. 10.)

Steph. Illustr. Brit. Ent. iii. 50. 1 (1830). Shuck. Brit. Col. Delin. 25. 229, pl. 30. fig. 6 (1840). Erichs. in Germ. Zeitschr. iv. 256. 4 (1843). Sturm, Deutschl. Ins. xv. 36. 1, taf. 292. fig. a, A (1844). Erichs. Ins. Deutschl. iii. 135. 2 (1848).

*Dermestes hemipterus*, Linn., Degeer.

*Nitidula flexuosa*, Payk., Herbst.

*Nitidula bimaculata*, Oliv., Gyll., Schönh.

*Nitidula dimidiata*, Fab.

*Nitidula cadaverina*, Fab.

*Stenus Ficus*, Fab.

Var. A.

*Nitidula quadrata*, Fab.

*Cateretes pictus*?, Heer, Faun. Col. Helv. i. 413 (1841).

*Cateretes dimidiatus*, Heer, Faun. Col. Helv. i. 413 (1841).

Niger, pubescens, prothoracis lateribus pedibusque ferrugineis; elytris apice lato sinuato et macula humerali luteis. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{2}{3}$  lin.

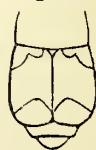
Var. A. Fuscus, elytris testaceis, plaga scutellari fusca.

Habitat ubique.

Convex, black or brown, slightly shining, and densely clothed with griseous pubescence, especially on the sides of the thorax and abdomen. Antennæ reddish yellow, with the club fuscous. Head small, deeply punctate, the mouth testaceous, underside piceous. The thorax is at its base of the breadth of the elytra, narrower in front, little rounded on the sides, before and behind almost straight, truncate, all the angles apparently rounded, but on closer examination the anterior angles are obtuse and declinate, and the posterior angles obtuse; moderately convex, densely punctate. Scutellum rather large, punctate. Elytra a little longer than the thorax, deeply, and in the middle almost rugosely, punctate; the whole apex and a spot at the shoulder testaceous. Abdomen finely punctate. Legs reddish yellow.

This species is spread over the whole world, and exhibits considerable variation in the colouring and the particular proportions and even form of some of the parts, but never

Fig. 97.



so much so as to alter the general effect. For example, the following variations occur in the form, with intermediate degrees of each, viz. :—

1. The posterior angles of the thorax nearly right angles.
2. The posterior angles of the thorax nearly rounded.
3. The posterior angles of the thorax obliquely cut off.

In colour, again, it varies as much, the variations, however, being all referable to greater or less intensity of colouring.

Before I had seen so large a series of specimens from all parts of the world as I now have, I was disposed to make several species, in which var. 1 would have represented the usual European form, var. 2 a form from South America, var. 3 from the Fiji Islands; but a more extended examination showed me that all these varieties are to be found in the specimens from any one place, and are therefore not to be regarded.

### 37. CARPOPHILUS 4-SIGNATUS.

Erichs. in Germ. Zeitschr. iv. 257 (1843).

Statura omnino *C. bipustulati*; subdepressus, confertissime punctatus, niger, antennarum basi pedibusque piceis, elytris maculis duabus testaceis. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in Europa meridionali et Asia.

Of the form of *C. bipustulatus*, black, throughout cinereo-pubescent; antennæ black, with the base piceous. Head densely punctate. Thorax slightly narrowed in front, slightly rounded on the sides, very convex and less faintly punctate in the middle, somewhat rugulose towards the sides, subimpressed on each side behind. Scutellum thickly punctate. Elytra a little longer than the thorax, very thickly punctate, with two testaceous spots, the one minute on the shoulder, the other larger near the suture before the apex. Abdomen densely and faintly punctate, with the last segment smooth towards the apex; the ventral segments margined with piceous. Legs piceous, with the knees and tarsi rufous.

Found in Sicily, Smyrna, &c.

### 38. CARPOPHILUS LIGATUS (Motsch.).

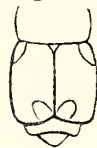
(*C. vittatus*, Motsch.)

Oblongo-ovatus, subnitidus, punctatus, niger; elytris fuscis, vitta oblonga testacea prope apicem et suturam; antennis pedibusque ferrugineis. Long.  $1\frac{1}{4}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in Taprobana.

Oblong-ovate, somewhat shining, punctate, black; elytra fuscous, with an elongate testaceous patch near the suture and apex. Head closely punctate, depressed in the middle in front, distinctly impressed on each side by a slender, short transverse line. Thorax narrower in front, with the sides slightly rounded; the anterior and posterior angles obtusely rounded; punctate, more deeply towards the sides, rather deeply impressed on each side behind; the base slightly margined, as well as the sides. Scutellum transversely subpentagonal. Elytra subdepressed, of the length of the thorax, more lightly punctate

Fig. 98.



than the thorax; the shoulders not very prominent, fuscous, with an oblong quadrangular patch near the scutellum and near the apex, the sides somewhat declinate, rounded and margined. The exposed segments of the abdomen large and very lightly punctate. Antennæ ferruginous, with the club fuscous. Legs ferruginous.

Sometimes the testaceous part of the elytra encroaches upon the brown, so that they are wholly testaceous with merely a brown vitta reaching from the shoulder to the apex.

From Ceylon and other parts of the East Indies.

### 39. CARPOPHILUS BIFENESTRATUS.

*C. bisignato* similis, sed minor, crebrius et fortius punctatus et convexior; thorace magis quadrato; elytris singulis macula rufa, latere exteriori angulati, versus suturam et scutellum obliqua. Long.  $1\frac{1}{8}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in Taprobana.

Smaller and more convex than *C. bisignatus* of Boheman, more closely and deeply punctate. Thorax more quadrate, the anterior angles obtuse, the posterior rounded, base somewhat rounded. Each elytron with a red spot, angular on the outer side, oblique on the inner side. The woodcuts here given are only intended to show the form and position of the red spot; in other respects they have no pretensions to accuracy.

From Ceylon.

Fig. 99.



### 40. CARPOPHILUS BIGUTTATUS (Klug) (Erichs.).

*Ips sanguineofasciata* (Dup.) (Dej. Cat. 134, 1837).

*Carpophilus bilunatus* (Cat. Mus. Jard. Pl.).

Valde affinis *C. bisignato*; angustior, minus convexus, præsertim thorace; elytris lateribus magis parallelis, macula rufa magis antrorsum posita et paulo transversa; pedibus rufo-ferrugineis. Long.  $1\frac{1}{4}$ – $1\frac{1}{3}$  lin., lat.  $\frac{1}{2}$ – $\frac{3}{5}$  lin.

Habitat in Madagascar.

Nearly allied to *C. bisignatus* of Boheman. Narrower, not so convex, more especially the thorax. The pubescence short and feeble both on thorax and elytra. Elytra with the sides more parallel, not more pubescent than the thorax, with the red spot more in front and somewhat transverse. Legs rufo-ferruginous.

From Madagascar.



Fig. 100.

### 41. CARPOPHILUS BIPUSTULATUS.

Erichs. in Germ. Zeitschr. iv. 258 (1843).

Sturm, Deutschl. Ins. xv. 39, taf. 292. fig. p, P. (1844).

Erichs. Ins. Deutschl. iii. 136 (1848).

*Ips bipustulata*, Heer, Faun. Col. Helv. i. 416 (1841).

Niger, pubescens, antennis medio pedibusque ferrugineis, elytris macula media rufa obliqua. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in Europa meridionali.

Fig. 101.



*C. bipustulatus.*

Fig. 102.



*C. bipustulatus, var.*

About the size and appearance of *C. hemipterus*; somewhat more depressed, black, feebly shining, thinly clothed with fine grey pubescence, more thickly on the sides. Antennæ red, with the first article piceous brown and the club black. Head small, sparsely and finely punctate, the epistome separated from the forehead by a somewhat rounded impression. Thorax behind of about the breadth of the elytra, and there about a third broader than long, considerably narrower in front, feebly rounded on the sides, in front and behind straight, truncate, all the angles somewhat rounded; sparsely and finely punctate on the disk, more thickly and somewhat rugosely on the sides, with a shallow round depression on each side behind at some distance from the posterior angles. Scutellum thickly and finely punctate at the base, and with thick pubescence. Elytra a little longer and more pubescent than the thorax, thickly punctate, the shoulders, which are somewhat projecting, and the apical margin very finely punctate, with fine black pubescence, the outer margin with two rows of fine greyish hairs; each elytron with a yellowish reddish spot with grey pubescence, the shoulders brownish. Abdomen not very thickly punctate, the pubescence in the middle of the segments fine and black, on the sides and at the point thicker and grey. Legs red; the thighs somewhat darker.

This species is rather narrower and more elongate than *C. hemipterus*. The elytra are without a humeral spot, although the colour is sometimes a little lighter at the shoulder, and the medial spot is somewhat oval and obliquely directed to the shoulder.

There is a variety which has the red spot reduced to a mere point, as shown in fig. 102.

From Austria, Sardinia, and other parts of the south of Europe.

#### 42. CARPOPHILUS BISIGNATUS.

Bohem. Ins. Caffr. i. 563 (1848).

Affinis *C. bipustulato*; angustior, subovatus, sat latus et modice convexus, niger, tenuiter cinereo pubescens; capite et thorace confertim punctulatis; elytris crebre rugoso-punctatis, rugis obsolete longitudinalibus, singulis prope sed paulo pone medium macula sat magna rufa fere rotunda paulo obliqua ex adverso scutelli; pedibus piceis. Long.  $1\frac{2}{3}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in Caffraria, Natalia, &c.

Allied to *C. bipustulatus*; narrower, subovate, rather broad and moderately convex, thickly punctate, finely cinereo-pubescent, black, with a red patch on each elytron. Head with a transverse faint line uniting two transverse foveæ immediately behind the epistome. Thorax with the disk less coarsely punctate than the sides, with a deep and more coarsely punctate fovea on each side a short space in front of the posterior angles, narrower in front than behind, with the posterior two-thirds of the margin nearly parallel, but with a slight sinuation corresponding to the deep fovea; a small fovea at the anterior margin on each side behind the sides of the head, anterior margin scarcely emarginate, posterior sinuato-truncate; both anterior and posterior angles obtuse, the lateral margins with a narrow raised edge somewhat roughened by the coarse punctuation. Elytra flattened, sloping obliquely from the suture, less coarsely punctate than thorax, a little widest behind the middle, thickly rugosely punctate, the punctures obsoletely

Fig. 103.



Note.—Outline of figure not exact. These cuts are merely meant to show the position and form of the red spot.

longitudinal; each elytron with a rather large subrhomboidal oblique spot in the middle near the suture, with its lateral margins both straight, the posterior margin extending from its sutural angle obliquely forwards and outwards, and the anterior margin rounded. Legs piceous.

From Caffraria, Natal, &c.

43. *CARPOPHILUS BINOTATUS* (Mus. Berol.).

Elongatus, subfusiformis, subdepressus, confertissime punctatus, cano pubescens, fere opacus, niger; elytris singulis macula sat magna rufa, antennarum basi pedibusque piceis, tarsi piceo-ferrugineis. Long.  $1\frac{1}{4}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in Sierra Leone.

Fig. 104.



At first sight suggesting more affinity with the section to which *C. dimidiatus* belongs (subgenus *Myothorax*) than to this; but a careful examination shows that it is only a very elongate and depressed form, belonging to the same section as *C. hemipterus*. Elongate, subfusiform, subdepressed, nearly opaque, very closely punctate, with a hoary pubescence, black, with a red spot on each elytron. Head impressed on each side in front. Antennæ piceous, with the club dusky. Thorax subquadrate, broader than long, slightly narrower in front than behind, sides very slightly rounded and margined, anterior angles slightly declinate, obtuse, posterior obtusely rounded, base nearly straight. Scutellum rounded at the apex. Elytra scarcely so much as a half longer than the thorax, about as broad as the base of the thorax, sides slightly declinate and rounded when viewed from the side, apex very slightly obliquely truncate; each elytron with a red patch occupying a large part of the middle, its inner side near the suture, at first parallel to it, afterwards extending obliquely outwards in front, its posterior margin extending somewhat in a curve obliquely forwards, its outer edge rounded, and the anterior portion oblique; sometimes the red has extended so far along the suture as to make the whole patch somewhat like a rounded triangle or broad cone with its base applied against the suture. Abdomen rather long. Legs piceous, tarsi piceo-ferruginous.

From Sierra Leone. In the British and Berlin Museums, &c.

SECTION VII. Body convex and fusiform. Texture so closely punctate as to appear shagreened.

Elytra without paler spots or markings.

44. *CARPOPHILUS BAKEWELLII*.

Elongato-ovatus, subdepressus, niger, rugoso-punctatus, subopacus, fusco pubescens; thorace angulis posticis oblique truncatis, fovea utrinque pube cinerea vestita; antennis pedibusque piceis. Long.  $1\frac{3}{4}$  lin., lat.  $\frac{3}{4}$  lin.

Habitat in Victoria in Australia.

Elongate-ovate, subdepressed, thickly punctate, the punctures flat and pitted, clothed with a fuscous pubescence, griseous in parts in certain lights, scarcely shining, except on the segments of the abdomen. Mouth and antennæ piceous; club darker. Head rather broad, with a faint curved line, deeper at each side behind the epistome. Thorax transverse, slightly convex, but somewhat flat on the disk behind, narrowest in front;

apex truncate, nearly straight; sides with a rather deep canaliculation within the margin, very gently rounded, most so towards the front, declinate and almost inflexed at the anterior angles, which are obtuse; posterior angles obliquely truncate at the point, anterior corner of this truncation rounded, posterior not, base trisinate and margined; there is a depression on each side of the disk rugosely punctate, in which a lighter pubescence than that on the rest of the surface lies, pointing towards the sides, and only visible when looked at from the side. Scutellum broadly triangular, with the apex rounded. Elytra not a great deal longer than the thorax, flat on the back; sides slightly widened and rounded a little behind the shoulder, and narrowed and rounded-in again near the apex, canaliculated within the margin, deepest below the shoulders, which without being high are distinct; there is a depression within the shoulders, and another longitudinal depression on each side of the suture, and the base of the suture itself is depressed; very coarsely punctate at the base, more lightly towards the apex, and clothed with a longish dark fuscous pubescence, which is thick towards the base, sparing towards the apex; apex of each elytron obliquely truncate; exterior apical angles obtusely rounded. Abdomen somewhat shining above, segments more punctate and pubescent behind than in front. Underside rather thickly punctate. Legs deep ferrugineo-piceous.

From the flattening of the disk and back of the elytra this might perhaps appear more properly placed in the third section, but it is in other respects convex, and is among its natural allies here.

From Melbourne. I have received specimens from Mr. MacLeay, which are now placed in the British Museum. There are also specimens in the Oxford Museum and in that of Mr. Bakewell, to whom I have dedicated it.

#### 45. CARPOPHILUS DOLENS.

Parvus, ovatus, parum depressus, subnitidus, creberrime leviter punctatus, niger, pedibus rufo-piceis. Long.  $1\frac{3}{4}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in Senegallia?

Somewhat of the form of *C. Bakewellii*, but smaller, more depressed, and black. Small, ovate, somewhat depressed, slightly shining, thickly punctate, the punctures somewhat flat and pitted. The head rather deeply impressed on each side in front. Thorax somewhat narrowed in front, bi-impressed and coarsely punctate on each side behind, very finely punctate, base bisinuate, anterior angles obtusely rounded, posterior angles nearly right-angled, with the point rounded. Scutellum very faintly and sparingly punctate. Elytra more opaque than the thorax, subrugosely punctate, depressed, shoulders not prominent, sides declinate, slightly margined and rounded, disk somewhat flat, slightly impressed near the suture, near the shoulder, and on the sides; exterior apical angles rounded, apex obliquely truncate. Abdomen with the two exposed segments large and broad, finely punctate. Legs rufo-piceous.

Supposed to be from Senegal. Described from a single specimen now in the British Museum.

## 46. CARPOPHILUS SERICEUS.

Motsch. Etud. Ent. vii. 41 (1858).

Depressus, opacus, punctatus, castaneus, pube longa grisea sericea vestitus. Long.  $1\frac{3}{4}$  lin., lat.  $\frac{3}{4}$  lin.

Habitat in India orientali.

Said by Count de Motschulsky to be similar in form to *C. marginellus*; larger and more depressed, opaque, punctate, clothed with a longish cinereous silky pubescence; elytra chestnut-coloured, abdomen and underside black. Antennæ rufo-piceous; club blackish. Thorax less strongly punctate than the elytra. Elytra short, depressed, and somewhat quadrate, with the sides a little rounded, margined, the margin canaliculate towards the base, not so towards the apex, which is slightly obliquely truncate, very finely punctate. Underside of prothorax rather strongly punctate. Legs rufo-piceous.

From the East Indies. Count de Motschulsky sent me a specimen, but unfortunately its head and thorax were lost on the way—an accident which prevents me saying more upon them than is contained in M. de Motschulsky's own description. The fragment, such as it is, is in the British Museum.

## 47. CARPOPHILUS OBSOLETUS.

Erichs. in Germ. Zeitschr. iv. 259 (1843).

*Carpophilus cribellatus*, Motsch. Etud. Ent. 1858, p. 41.

*C. hemiptero* paulo minor et magis depressus, confertissime punctatus, nitidulus, parcius cinereo pubescens; niger, pedibus testaceis; elytris lateribus rugulosis, nigro-fuscis, macula humerali obsoleta picea. Long.  $1\frac{1}{2}$  lin.

Habitat in Taprobana, India orientali, Siam, Aden, et insulis Philippinis.

Var. *C. strigipennis*, Motsch. Etud. Ent. 1858, p. 41.

Niger et plerumque minor. Long.  $1-1\frac{1}{2}$  lin.

Habitat in Taprobana et Siam.

Somewhat smaller and more depressed than *C. hemipterus*, black, somewhat shining, sparingly cinereo-pubescent. Antennæ ferruginous. Head densely and rather deeply punctate, obsoletely impressed on each side in front. Thorax of the breadth of the elytra, scarcely narrower in front, very thickly and somewhat strongly punctate, rugulose towards the sides, with a fovea near the posterior angles; anterior angles obtusely rounded; posterior angles nearly rectangular, but with the point broadly rounded; pubescence directed from the sides towards the middle and slightly backwards. Scutellum transverse, subpentagonal, apical angles rounded, faintly punctate at the base, smooth at the apex. Elytra a little longer than the thorax, very thickly punctate, towards the sides finely rugulose, nigro-fuscous, with a minute obsolete piceous humeral spot. Abdomen thickly punctate, with the segments margined with piceous; pygidium subacuminate at the apex. Legs testaceous.

The species described by M. de Motschulsky under the name *C. strigipennis* is only a slightly darker and smaller variety.

From Ceylon, East Indies, Siam, &c.

## 48. CARPOPHILUS CHALYBEUS.

Subfusiformis, convexus, chalceo-piceo-niger, subnitidus, crebre punctatus, sericeo pubescens. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{3}{5}$  lin.

Habitat in Sunggaria.

Var. CANUS (*obscurus*, Motsch.).

Niger, haud chalybeo tinctus.

Habitat in Dauria.

Subfusiform, nearly as much attenuated before as behind, convex, greenish-brassy piceous black, somewhat shining, clothed with a longish silky hoary pubescence, thickly punctate, punctures round and cupped. Head with the epistome slightly marked off from the rest of the head. Antennæ nigro-piceous, with the club dusky black. Thorax narrower in front than behind, apex not emarginate, sides gently rounded, anterior angles very little obtuse, slightly reflexed at the tip, posterior angles obtuse, rounded, base bisinuate, middle further back than the sides: the pubescence and the punctuation combine to give the surface a velvety appearance, the pubescence pointing inwards and backwards to a point on the median line a little before the scutellum. Scutellum transverse, somewhat pentagonal, apical angles rounded, very pubescent. Elytra a little longer than the thorax, and a little broader than it at the base, rather convex, slightly depressed behind the shoulders, which are rather prominent and rounded, sides very slightly rounded, declinate, widest a little behind the shoulder, with a longitudinal line running down along the side beyond the shoulder; apex of each elytron obliquely truncate, exterior apical angles rounded, sutural angles obtuse. Abdomen with the exposed segments large, and about equal in length; fimbriæ scarcely observable. Legs black; tarsi nigropiceous.

From Sunggari. I owe this species to M. Obert, of St. Petersburg.

The non-æruginous variety is from Dauria, and was sent to me by M. de Motschulsky.

## 49. CARPOPHILUS CRIBRATUS.

Parum convexus, oblongus, subfusiformis, opacus, fortiter punctatissimus, griseo pubescens; niger, ore, antennis pedibusque rufis; thorace lateribus postice subsinuatis, angulis posticis subacutis et retro projicientibus. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{3}{4}$  lin.

Patria ignota.

Slightly convex, subfusiform, opaque, strongly and very thickly punctate, griseo-pubescent, black. Head punctate, impressed in front; the mouth and antennæ rufous, except the club, which is fuscous. Thorax subquadrate, the anterior angles obtuse, declinate, almost inflexed, the sides straight, except near the apex, where they are rounded in, apex straight, subsinuate behind the middle, causing the posterior angles to appear acute and a little like a curved tooth projecting backwards and outwards; before the scutellum with a short, slightly raised dorsal line; the base truncate, sinuate on each side towards the angles. Scutellum and base of the elytra declining to the base of the thorax. Elytra with the sides straight until behind the middle, when they become nar-

rower; margins of the sides declinate, moderately rounded, and edged; apex of each elytron obliquely truncate; exterior apical angles broadly rounded. Legs rufous.

A very distinct species; readily distinguished by its coarse punctation and by the posterior angles of the thorax projecting backwards.

Habitat unknown. A single specimen in the collection of Herr Dohrn, of Stettin.

#### 50. CARPOPHILUS FUSUS.

Elongatus, fusiformis et antice et postice fere æqualiter attenuatus, sat convexus, niger, punctatus, nigro pubescens; prothoracæ versus basin longitudinaliter utrinque bi-impresso; tarsi rufo-piceis. Long.  $1\frac{3}{4}$  lin., lat.  $\frac{3}{4}$  lin.

Habitat in insula Dorey prope Novam Guineam.

Elongate, fusiform, nearly as much attenuated in front as behind, rather convex, black, punctate, sparingly nigro-pubescent. Head with a slight transverse impression, and a small fovea on each side of it behind the epistome. Thorax broader than long, about as broad as the length of the head and thorax, narrower in front than behind; sides somewhat parallel for the posterior two-thirds, thence gently rounded to the apex, which is nearly straight; anterior angles much declinate, obtuse, with the point rounded; posterior angles nearly right angles, slightly obtuse and blunt; disk longitudinally convex, with a depression close to and all along the side, and another longitudinal depression within that, proceeding from the base and disappearing about halfway forward, these depressions more deeply and thickly punctate than the rest of the surface; base slightly bisinuate. Scutellum depressed at the base, rounded at the apex. Elytra about equal in length (at the suture) to the thorax, disk flat, sides nearly parallel, deeply declinate and slightly inflexed, the margin rounded, widest a little behind the shoulder; apex of each elytron obliquely truncate; exterior apical angles rounded, sutural angles obtuse. Abdomen with the two exposed segments long (about the length of the elytra), finely punctate and pubescent. Underside punctate. Legs with the tarsi rufo-piceous.

Found by Mr. Wallace in the island of Dorey, one of the New Guinea Islands, and in the island of Morty, north of Gilolo.

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#### *Species mihi invisæ.*

The following species probably belongs to this or the preceding section; but as I have not seen it, and the description is insufficient, I merely reproduce M. Lucas's description.

#### 51. CARPOPHILUS IMMACULATUS.

Lucas, Explor. Scient. de l'Algér. Zool. ii. 218 (1849).

“Ater, capite granario punctatoque; thoracæ subtilissime marginato; scutello elytrisque fortiter punctatis, sparsim flavo-testaceo pilosis; segmentis abdominis supra subtilissime punctulatis, corpore infra sat fortiter punctato; pedibus fusco-rufescentibus tarsisque ferrugineis.

“Habitat in Oran in Algeria.”

Black. Head subrugosely punctate. Thorax very faintly margined. Scutellum and

elytra strongly punctate and sparsely clothed with a testaceous-yellow pile. Abdomen with the exposed segments very finely punctate, the body below rather strongly punctate. Legs rufescent-fuscous; tarsi ferruginous.

From Oran in Algeria.

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SECTION VIII. Body very convex and colours bright.

52. CARPOPHILUS MELANOPTERUS. (Plate XXXII. fig. 11.)

Erichs. in Germ. Zeitschr. iv. 262 (1843).

Subovatus, obesus, subopacus, convexus, apterus, læte rufus, elytris nigris, opacis, abdomine subnitido. Long.  $1\frac{1}{2}$ –2 lin., lat.  $\frac{3}{5}$ –1 lin.

Habitat in partibus meridionalibus Americæ borealis.

Generally about twice the size of *C. hemipterus*, but sometimes no larger, obese, convex, rufous, subopaque, finely punctate. Antennæ with the club black. Head finely punctate, subimpressed on each side in front. Thorax convex, very thickly finely punctate, subrugulose, gently narrowed in front, truncate at the apex, subsinuate on each side at the base, with the sides slightly rounded, acutely margined; anterior angles obtuse, posterior angles rounded. Scutellum triangular, closely punctate. Elytra convex, a little longer than the thorax, finely punctate, black or bluish black, opaque, with the shoulders and the apex sometimes subrufescent, apex obliquely truncate; sutural angles obtuse, exterior apical angles rounded. Abdomen very thickly punctate. Legs testaceous.

From South Carolina, Mexico, &c.

53. CARPOPHILUS RUFUS.

Sat magnus, parum convexus, aurantiaco-rufus, subopacus, creberrime leviter punctatus, breviter rufo pubescens; thorace angulis posticis abrupte incurvatis. Long. 2 lin., lat. 1 lin.

Habitat in Mexico.

Large, rather broad and slightly convex, above orange-red; the abdomen a little darker and somewhat piceous, below wholly piceo-ferruginous, closely and very finely punctate, subopaque, with a close, short, concolorous pubescence. Head with two impressions in front between the eyes. Thorax nearly twice as broad as long, wider behind than in front; sides for the anterior four-fifths sloping gradually to the apex, for the posterior fifth incurved rapidly and abruptly to the posterior angles, making these angles appear as if cut off, but the real angle is further in towards the base; apex not emarginate, anterior angles slightly obtuse, posterior angles excessively obtuse and slightly reflexed at the tip, disk somewhat flat in the middle. Scutellum rounded at the apex. Elytra a little wider than the thorax, not much longer than broad, not much declinate towards the margin, the inflexed portion on the underside rather wide, widest behind the shoulder; apex of each elytron obliquely truncate; disk impressed near the scutellum and near the shoulder. Abdomen more coarsely and sparingly punctate; pygidium longer than penultimate segment.

From Mexico. In the collection in the Jardin des Plantes.

## 54. CARPOPHILUS PALLIPENNIS (FLORALIS, Erichs.).

*Cercus pallipennis*, Say, Journ. Acad. Nat. Sc. Philad. iii. 194 (1823).

*Carpophilus floralis*, Erichs. in Germ. Zeitschr. iv. 261 (1843).

Var. *Carpophilus canus* (Erichs.).

Subovatus, convexus, niger, dense punctatus, griseo pubescens; antennis testaceis, clytris pedibusque testaceis vel rufo fuscis. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{3}{4}$  lin.

Habitat in Arkansas prope montes rupestres et in Mexico.

Subovate, short, convex, densely punctate, griseo-pubescent, black, with the elytra testaceous or reddish brown. Antennæ testaceous, with the club black. Labrum rufous. Head very thickly punctate, bifoveolate in front. Thorax transverse, gently narrowed in front, truncate at the apex, with the sides and all the angles rounded, convex, very thickly and rather deeply punctate, with the back behind and on each side obliquely impressed. Scutellum very thickly punctate. Elytra almost a half longer than the thorax, very thickly and rather deeply punctate, apex obliquely truncate, truncation somewhat rounded; exterior apical angles rounded, sutural angles obtuse. Abdomen closely punctate. Legs testaceous or reddish brown.

Dr. Schaum had in his collection a dark specimen of this species, standing under the name of *C. canus*, Erichs., which he has been good enough to cede to me for the British Museum.

From Mexico, Arkansas, and other parts of North America.

SECTION IX. (Subgenus MYOTHORAX (*μυὼν*, a muscular part; and *θώραξ*, thorax).) Body subcylindrically convex, oblong. Thorax subquadrate (see fig. 105).

## 55. CARPOPHILUS MACULATUS.

Oblongus, convexus, leviter et parce punctatus, griseo pubescens, subnitidus, nigro-fuscus; elytris ferrugineo obscure maculatis. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{3}{5}$  lin.

Habitat in insula Oahu.

Oblong, convex, lightly and sparingly punctate, griseo-pubescent, nigro-fuscous. Head punctate and pubescent, scarcely impressed in front, the vertex behind with a transverse obscure ferruginous mark. Antennæ obscurely ferruginous. Thorax of the same breadth before as behind, convex, transversely subquadrate; the sides deeply declinate, nearly straight, slightly rounded in front and behind, most rounded behind; anterior angles nearly right angles, with the point rounded, posterior angles rounded; apex somewhat bisinuate, base truncate; very finely and sparingly punctate on the disk, more coarsely punctate and more pubescent towards the sides; sides of thorax when looked at from the side wider than sides of elytra, when looked at from above apparently nearly equal in breadth. Scutellum nigro-piceous, punctate. Elytra rounded-in at the shoulder, seen from the side slightly rounded, widest behind the shoulder; the sides, seen from above, nearly parallel; apex of each elytron truncate a little obliquely; exterior apical angle nearly a right angle, rounded; sutural angles almost right angles; finely and sparingly punctate, dark chestnut, somewhat dull, with a ferruginous patch along the base covering the shoulder, another near the suture about its middle, and another near the outer margin

a little further back. Abdomen thickly griseo-pubescent and punctate, margins of the segments narrowly rufescent. Legs obscurely ferruginous.

From Oahu.

56. CARPOPHILUS VITTIGER.

*Carpophilus biguttatus*?, Motsch. Etud. Ent. 1858, p. 43.

Elongatus, subopacus, punctatus, cano valde pubescens; nigro-fuscus, ore, capite basi elytrisque basi et vitta a basi usque pone medium obscure rufo-testaceis. Long.  $1\frac{2}{3}$  lin., lat.  $\frac{3}{5}$  lin.

Habitat in India orientali et insulis Waigiou, Aru, Morty, Dorey, &c.

Var. ROBUSTUS. Thorace magno, magis punctato, elytris haud breviores.

Habitat in Waigiou.

Var. NIGRITUS. Totus niger, capitis basi et interdum elytrorum basi exceptis.

Habitat in insula Waigiou, prope Novam Guineam.

Var. TESTACEUS. Totus testaceus.

Habitat in insula Waigiou, prope Novam Guineam.

Var. LIMBALIS. Testaceus, elytris limbo angusto apicali nigro.

Habitat in insula Dorey.

Var. DILUTUS. Testaceus, elytris basi et vitta suturali dilutionibus.

Habitat in Macassar.

Elongate, narrow, subopaque, punctate, hoary pubescent, the pubescence, when not rubbed, long and woolly, nigro-fuscous. Head obscure fuscous, its base and the mouth and antennæ rufo-testaceous, mandibles darker at the apex. Thorax subquadrate, a little narrower before than behind, wholly fuscous, rather smooth, sparsely and lightly punctate, with the base as well as the sides lightly margined, the anterior angles almost right angles, the posterior rounded: a doubtful dorsal line behind; it is broader, particularly in front, in some individuals than in others—in some instances so much so as to be broader before than behind—probably a sexual character. Scutellum fuscous. Elytra of the breadth of the thorax and continuous with it, longer than the thorax, with the sides subparallel, lightly margined, with the apex very slightly obliquely truncate; fuscous, the base and a rather broad stripe extending from the base to behind the middle, parallel to the suture, obscurely rufo-testaceous, the suture itself fuscous. The last two segments of the abdomen long, punctate posteriorly, almost impunctate in front, and the pygidium flat and conical. Legs rufo-testaceous.

This is a most variable species, and if we had only one or two of the extreme forms, it would unquestionably have figured as two or three species at least; but as I have been furnished with a large series by Mr. Wallace, I have been enabled to arrive at a more correct conclusion. The varieties differ not only in colour, but in the development of the thorax and the comparative length of the thorax and elytra. These pass, by such trifling degrees, from one to the other, that no doubt as to their being mere varieties can exist.

Were the various forms peculiar to different islands, I might have separated them; but it is not so, the different varieties are found in the same island as well as in the other islands: one is entirely black; another is entirely testaceous; another is testaceous, with a black edging to the apex of the elytra, in some instances narrow, in others broad; and another is testaceous, with the usual vitta paler or whitish.

From the East Indies, Borneo, and the Malayan Archipelago. Collected by Mr. Wallace at Macassar, also in the island of Waigiou, near New Guinea, and in the islands of Dorey, Aru, Morty, &c.

Count de Motschulsky, in mentioning the species which he included in his proposed subgenus *Ecnomorphus* (of which *C. sexpustulatus* was to be the type), says,—“A third species from the Indian continent is the *Ecnomorphus biguttatus*, Motsch., which singularly resembles *E. sexpustulatus* not only in its form and in its coloration, but is distinguished from it by its thorax being larger and more square, not at all rounded on the sides, nor narrowed behind, by the base of the abdomen being of a testaceous brown, and by the elytra having only a testaceous spot in the middle.” The characters here given are wholly inconsistent with any affinity with *C. sexpustulatus*; and as I find that M. de Motschulsky made a similar error with regard to his *C. fulvipes*, of which he has had the kindness to send me specimens, I have come to the conclusion that his *E. biguttatus* may possibly be one of the varieties of this species, which is the only East Indian species I know of which comes near it in colour.

#### 57. CARPOPHILUS OCULATUS.

Affinis *C. maculato*; major, magis nitidus, saturate castaneus vel ferrugineo-niger; capite postice, ore, antennis thoracisque angulis anticis ferrugineis; elytris ferrugineis, apice, sutura et macula rotundata in medio nigris; abdomine nigro-piceo, lateribus ferrugineis; pectore nigro-piceo; pedibus ferrugineis. Long.  $1\frac{2}{3}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in insula Borabora.

Nearly allied to *C. maculatus*; larger, more shining, less pubescent; dark chestnut-coloured or ferruginous black. Head very finely punctate, with the mouth and the back of the head ferruginous; antennæ ferruginous. Thorax subquadrangular, longer than in *C. maculatus*, more shining, very finely punctate, most thickly so on the sides, which are subparallel, very slightly rounded, and very much declinate; anterior angles obtuse and rounded, posterior angles rounded, base slightly sinuate; disk dark chestnut, anterior angles with an adjoining portion of the apex and sides ferruginous. Scutellum triangular, dark chestnut, finely punctate. Elytra longer and more parallel than in *C. maculatus*, a little wider behind the middle, not rounded-in at the shoulder as in that species, rather faintly granulosely punctate; dark ferruginous, with the apex and the suture black or nigro-piceous (the apex black for about a fourth of the length of the elytra, the suture narrowly black); the remaining ferruginous disk on each elytron has a large black spot in the middle, which spreads to the side so as almost to reach it; sides deeply margined, apex of each elytron obliquely truncate, sutural angles obtuse, exterior apical angles

obtuse, rounded on the outside. Abdomen piceous black, with the sides ferruginous, very finely punctate and pubescent. Breast nigro-piceous. Legs ferruginous.

From Borabora. A unicate in the Museum at Copenhagen; collected on the voyage of the Danish frigate 'Galathea.'

#### 58. CARPOPHILUS MUTABILIS.

Fairm. Essai sur les Coléoptères de la Polynésie, in Rev. et Mag. de Zool. June 1849, p. 26.

Parum depressus, punctatus, elytris prothorace sesqui longioribus; colore variabili: brunneus, prothoracis lateribus et elytrorum macula arcuata rufis; interdum testaceus, prothoracis disco et elytrorum macula brunneis. Long.  $1-1\frac{1}{2}$  lin.

Habitat in Tahiti.

Elongate, slightly depressed, thickly punctate, with a silky pubescence. The thorax more finely punctate than the elytra, with the angles rounded, and sometimes with a scarcely perceptible line in the middle. Elytra once and a half as long as the thorax, truncate. The colour is very variable: in young individuals it is rather bright testaceous, with the disk of the thorax and a spot upon each elytron brownish; afterwards, by transition, the colour becomes reddish, with the disk of the thorax, a spot in the middle of the elytra, and the extremity brown; the normal colour is brownish black, with the circumference of the head, that of the thorax, an arched blotch on each elytron, the abdomen, and the legs of an obscure sanguineous red. In one variety there remains nothing of red but the posterior part of the head and a narrow transverse band at the base of the elytra.

Very common all the year round at Tahiti in all kinds of decaying fruits, but more particularly in oranges and citrons.

M. Fairmaire says that this species is allied to *C. obsoletus*, Erichs., but differs from it by its longer elytra, less depressed body, and differently disposed coloration. From his description, however, it seems more allied to the preceding species or to *C. vittiger*; but as I have not seen it, and it does not entirely agree with either, I can only reproduce it, leaving it to be hereafter determined whether it is distinct or not.

#### 59. CARPOPHILUS FUMATUS.

Bohem. Ins. Caffr. i. 564 (1848).

Subovatus, modice convexus, piceus, parum nitidus, cinereo pubescens; antennis pedibusque rufo-testaceis; capite prothoraceque subtiliter crebre punctulatis; elytris rufo-testaceis, evidenter crebre rugoso-punctatis, apice infuscatis. Long.  $1\frac{1}{4}$  lin., lat.  $\frac{3}{4}$  lin.

Habitat in Caffraria.

Equal in size to *C. hemipterus*. Head above somewhat convex, piceous, a little shining, slenderly pubescent, finely thickly punctulate. Antennæ short, rufo-testaceous, with the club fuscous and rounded. Thorax scarcely a half shorter than broad, piceous, above moderately convex, finely thickly punctulate, slenderly cinereo-pubescent, in front gently

emarginate, anterior angles obtuse, sides immediately behind the apex moderately, then a very little more widely rounded, behind subtruncate, with the posterior angles obtuse. Scutellum short, broad, subtriangular, piceous, subopaque, finely thickly punctulate. Elytra a half longer than the thorax and not broader than its base, finely thickly rugosely punctate, slenderly cinereo-pubescent, truncate in front, the shoulders a little raised, subangular; the sides slightly margined, at the middle a little more widened and rounded, with the apex of each obliquely truncate, the exterior angles obtuse; moderately convex, rufo-testaceous, slightly shining, with the apex more or less infusate. Body piceous, slightly shining, finely thickly punctulate, slightly cinereo-pubescent. Legs rufo-testaceous, obsoletely punctulate, sparingly pubescent.

Exceedingly close to *C. mutilatus*; probably only a variety. Its thorax is more quadrate and pubescence finer. In other respects there is little perceptible difference.

From Caffraria.

#### 60. CARPOPHILUS AUSTRALIS.

*C. fumato* affinis, major et elongatior; oblongo-ovalis, punctatus, subpubescens, pallide castaneus, elytris dilutioribus, sutura et spatio scutellari brunneis, abdomine saturatiore, ore pedibusque testaceis, mandibulorum apice piceis. Long.  $1\frac{2}{3}$  lin., lat.  $\frac{3}{4}$  lin.

Habitat in Victoria in Australia.

Similar in appearance to *C. fumatus*; larger and more elongate, and with the thorax narrower in front. Oblong-oval, punctate, subpubescent, pale chestnut-coloured, with the elytra paler and the suture and scutellar space brunneous, the abdomen darker, the mouth and legs testaceous, the apex of the mandibles piceous. Thorax narrowed in front, sides subparallel, scarcely rounded except towards the anterior angles, where they are rounded in. In other respects as in *C. fumatus*.

Most readily distinguished from its congeners by its thorax being more narrowed in front, the sides sloping straight to the slightly rounded anterior angles. It has, in fact, considerable affinity with the section in which I have placed *C. hemipterus*.

From Melbourne in Australia.

#### 61. CARPOPHILUS ANGUSTATUS.

Parallelus, angustatus, sat convexus, niger, opacus, pubescens, rugose punctatus; thorace subquadrato, angulis rotundatis; elytris callo humerali obsolete ferrugineo; antennis pedibusque ferrugineo-piceis. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{2}{3}$  lin.

Var. Totus fuscus, griseo pubescens.

Habitat in Madagascar.

Elongate, parallel, narrow, rather convex, black, opaque, pubescent, and rugosely punctate. Head with a shallow depression on each side between the eyes. Thorax subquadrate, slightly narrower in front than behind, all the angles rounded, a depression towards the posterior angles. Elytra rather convex, the humeral callus showing an

indication of dark ferruginous; the penultimate segment of the abdomen above showing a tendency to a paler margin. Antennæ and legs ferrugineo-piceous.

From Madagascar.

Among the specimens from Madagascar in the collection of the Jardin des Plantes is one wholly fuscous and with a light griseous pubescence. It is a trifle narrower than the typical example of this species, but I can see no other difference, and I have therefore recorded it as a variety.

## 62. CARPOPHILUS OCHROPTERUS (Klug).

*C. quadraticollis*, Mus. Jard. Pl.

*C. lividus*, Dej. Cat. p. 134.

Elongatus, subconvexus, crebre punctatus, ferrugineo-fuscus, subtus ferrugineus, thorace supra nigro vel fusco, lateribus et elytris dilutionibus; thorace quadrato, fere latiore antice quam postice. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{2}{3}$  lin.

Var. Totus ferrugineus.

Habitat in Madagascaria et Caffraria.

Subcylindric, elongate, subconvex, ferrugineo-fuscous, thorax sometimes fuscous or black, darkest on the disk; the elytra paler, sometimes yellowish, and palest on the disk; densely punctate and with short pubescence. Head convex, with a triangular smooth space (of which the apex is pointed backwards) immediately behind the labrum. Thorax large and square, if anything a little wider before than behind, with the sides and anterior angles steeply declinate; disk less coarsely punctate than the rest; a short smooth line in front of the scutellum; sides and base narrowly margined, apex scarcely margined, a shallow depression towards the posterior angle; anterior angles obtuse, posterior angles rounded. Scutellum smooth and impunctate. Elytra scarcely longer than the thorax, very slightly longer than broad, margins edged and exteriorly broadly inflexed, less coarsely punctate than the thorax, apex obliquely truncate. Abdomen densely punctate.

There is considerable variation in the size and colour of this species. The thorax is in some instances wholly testaceous, in others wholly fuscous, and again testaceous with the disk fuscous.

It has very much of the character of *C. mutilatus*, but is twice its size. It is still nearer to *C. luridus*, but is more coarsely punctate. I am not quite satisfied that it is really distinct from it, but place it so until we obtain more information and additional materials.

From Madagascar, Natal, and Caffraria.

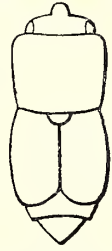
## 63. CARPOPHILUS LURIDUS.

(Dej. Cat. 134, ed. 1837.)

*C. ochroptero* et *C. mutilato* intermedius; hoc sesqui major, interdum rufo-ferrugineus, interdum ferrugineus, cum thoracis disco et corpore subtus fusco vel nigro, antennis pedibusque ferrugineis; *C. mutilato* magis punctatus; thorace quadrato, fere latiore antice quam postice. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in Europa, America boreali, America meridionali, India orientali &c.

Fig. 105.



Subcylindric, oblong, very coarsely punctate, testacco-rufo-pubescent, rufo-ferruginous or ferruginous, with the disk of the thorax and the abdomen and body below fuscous. Head with the epistome rounded. Thorax with the sides declinate, the anterior angles somewhat right-angled, the posterior broadly rounded, the sides and base margined. Scutellum rounded at the apex, somewhat fuscous, finely punctate. Elytra with the sides gently rounded and margined; apex of each elytron obliquely truncate. Legs rufous.

From Europe, North America, South America, East Indies, Ceylon, &c.

I have received this insect from Ceylon, mixed up with *C. mutilatus*, and I am almost inclined to think that they may be varieties of the same species. The only difference that I can see, besides size and stronger punctuation, is that the thorax is more quadrate than in *C. mutilatus*. In this species the squareness is more marked; but it will be seen from my remarks upon *C. vittiger* that this may perhaps be a sexual character—at any rate a variable one. The specific name proposed for *C. ochropterus* in the Museum of the Jardin des Plantes (*C. quadraticollis*) would have been better applied to this.

#### 64. CARPOPHILUS MUTILATUS.

Erichs. in Germ. Zeitschr. iv. 258 (1843).

*Nitidula hemiptera*, Fab. Ent. Syst. i. 1. 261 (1792).

*Nitidula pallens*?, Blanch. in d'Orbigny, Voy. dans l'Amér. Mérid. vi. 2. Ins. 64 (1837-43).

*Carpophilus mutilatus*, Woll. Ins. Mad. 116 (1854).

Subcylindrico-oblongus, rufo-ferrugineus, pubescens, crebre subtiliter punctatus; thorace subquadrato; elytris thorace vix longioribus; abdomine infra colore saturatiore. Long.  $1\frac{2}{3}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in Europa meridionali, in Madera, in India orientali, in India occidentali, in Australia &c.

Subcylindric-oblong, sparsely clothed with a rather long pale testaceous pubescence, densely and finely punctate, not shining, flavo-testaceous or rufo-ferruginous. Head punctate, with longer pubescence than that on the thorax: the usual impressions on each side in front are either absent or very slight. Thorax convex, large, subquadrate, rather strongly punctate, the punctures variolose, the pubescence all directed to a point immediately in front of the scutellum; sides declinate, angles all obtusely rounded, apex and base nearly straight, truncate; the disk usually somewhat darker than the sides. Scutellum also darker, moderate in size, rounded, nearly impunctate, a few faint small punctures only at its base. Elytra scarcely (perhaps a very little) longer than the thorax, not wider than the thorax, shoulders distinct, but not very prominent, sides straight when seen from above, declinate and slightly rounded, margin distinct; testaceous, paler than the thorax, near the scutellum and along the apex slightly darker than the rest of the elytra, finely and not very closely punctate, punctuation becoming thicker towards the suture, pubescence long; the apex declinate, each elytron truncate obliquely, exterior apical angles obtusely rounded, sutural angles obtuse, right angles at the very point. Abdomen above rufo-ferruginous, with a tinge of fuscous; underside and legs rather darker. Legs robust.

I am inclined to think, from M. Blanchard's description and the examination of a

mutilated fragment of the type in the Museum of the Jardin des Plantes, that his *Nitidula pallens* belongs to this species.

This species is now found in most countries to which commerce has penetrated. Its original habitat is supposed to be the West Indies.

#### 65. CARPOPHILUS DIMIDIATUS.

Erichs. in Germ. Zeitschr. iv. 259 (1843).

*Nitidula dimidiata*, Fab. Ent. Syst. i. 1. 261. 27 (1792); Syst. El. i. 354. 36 (1792).

*Carpophilus pusillus*, Steph. Illustr. Brit. Ent. iii. 51. 2 (1830); Manual, 122. 975 (1839).

*C. auripilosus*, Woll. Ins. Mad. 117 (1854).

*C. cephalotes* (Mus. Berol.).

*C. mutilato* valde affinis, minor: subcylindrico-oblongus, fuscus, testaceus, testaceo-rufus, rufo-ferrugineus, testaceo-fuscus, piceus vel nigro-piceus, elytris interdum partibus dilutioribus; dense et fortiter punctatus, pubescens ut in *C. mutilato*; thorace quadrato; elytris thorace longioribus. Long.  $1-1\frac{1}{4}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in Europa, America boreali, India occidentali, Madera, India orientali, Australia &c.

Very closely allied to *C. mutilatus*, from which I feel scarcely warranted in separating it. It is smaller, and decidedly more coarsely and deeply punctate; more especially the variolose punctuations on the head and thorax are larger and deeper. It is proportionally shorter and broader. The thorax has the anterior angles squarer (more high-shouldered as it were), although in some specimens this difference is not so perceptible as in others, there being a slight difference in individuals in this respect. The colour is variable, from dark brown (almost black) to rufo-testaceous. There is usually a pale, oblique, rather broad band on each elytron, running from the shoulder to the suture near the apex, forming together the letter V, so that the scutellum is surrounded with a triangular large dark patch, and the pale colour also extends backwards for a short distance along the margin or the base. Traces of this distribution of colour may even be seen in the darkest individuals; for, after the elytra are wholly black, the pubescence on the space where the V-like band should be is usually more abundant and paler. It is to be remarked that in this family the punctuation generally partakes of the colour of the surface from which it springs. The darker the specimens are, the deeper also is the punctuation. The elytra are proportionally shorter, and not so declinate at the apex as in *C. mutilatus*. In this species they are usually very little longer than the thorax; in that species about one-fourth or one-third longer.

Found in all parts of the world.

A single specimen is recorded by Mr. Wollaston as having been taken in the neighbourhood of Funchal, in Madeira. He supposed it to be a distinct species, and named it *auripilosus* from the pale yellowish pubescence with which it is clothed; but I do not find the pubescence more golden than is usually the case in *C. dimidiatus*. The elytra are perhaps a little longer, but not sufficiently so to make it a distinct species. It is a small individual with the least-developed form of thorax (narrowed in front) which is found in this group. In the collection of Mr. Wollaston's Madeiran insects in the British Museum. It has also been found by him in the Canary Isles.

This is a most variable species, both as to colour, punctuation, and form of the thorax ; but I have been unable to find more than one species in it. The most confusing character is the thorax—in some specimens comparatively narrowed in front and not very convex or large, in others large, broad, wide in front, and very convex. It is possible that these are sexual distinctions, and that the same characters will be found to distinguish the sexes in all this oblong group. A large light-coloured variety stands in the Berlin Museum under the name of *C. cephalotes*.

66. CARPOPHILUS PALLESCENS.

*C. dimidiato* affinis; multo levius punctatus, pubescentia brevi æqualiter vestitus, testaceus, elytrorum apice saturatiore. Long. 1 lin., lat.  $\frac{1}{3}$  lin.

Habitat in insula Waigiou prope Novam Guineam.

Allied to and very like *C. dimidiatus*, but, instead of being somewhat coarsely punctate as seen under the lens, its surface is so finely punctate as to be almost imperceptible. The pubescence is short and regularly distributed, instead of being, as in *C. dimidiatus*, all directed to a point in front of the scutellum. The sides of the thorax are much declinate and strongly margined, the posterior angles rounded, and the anterior angles obtuse. Its colour is testaceous, in some specimens darker on the apex of the elytra and abdomen. In other respects there is little difference between it and *C. dimidiatus*.

From the island of Waigiou, near New Guinea.

67. CARPOPHILUS PILOSELLUS.

Motsch. Etud. Ent. 1855, p. 41.

*C. dimidiato* valde affinis; minor, levius punctatus, pube brevior et magis sericea; thorace antice parum angustiore; scutello minore: capite et thorace dilute castaneis, elytris testaceo-piceis, abdomine piceo-nigro, pedibus piceis. Long. 1–1 $\frac{1}{5}$  lin., lat.  $\frac{1}{4}$ – $\frac{1}{3}$  lin.

Habitat in India orientali et in Celebes.

Closely allied to *C. dimidiatus*. Smaller, narrower, and comparatively more elongate; more finely punctate, and with a shorter and more silky pubescence disposed as in that species; the thorax slightly narrower in front; the scutellum somewhat smaller. The head and thorax pale chestnut; the elytra testaceo-piceous; the abdomen and underside piceous black; the legs piceous.

From the East Indies and the island of Celebes.

68. CARPOPHILUS NOTATUS (Klug).

*C. dimidiato* similis, elytrorum medio macula obsoleta rufa. Long. 1 $\frac{1}{4}$  lin., lat.  $\frac{1}{3}$  lin.

Habitat in Madagascaria.

Similar to *C. dimidiatus*, with an obsolete rufous patch in the middle of the elytra. From Madagascar. In the Berlin collection.

## 69. CARPOPHILUS TRUNCATUS (Klug).

(*C. Madagascariensis* (Dup.).)

*C. dimidiato* affinis; parum latior; niger, punctatus, cinereo pubescens; thorace fortiter punctato, elytris thorace vix longioribus, pedibus piceis. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{3}{4}$  lin.

Var. Elytris piceis, humeris dilutioribus.

Habitat in Madagascaria.

Allied to *C. dimidiatus*; a little broader and wholly black; punctate, cinereo-pubescent. Thorax more deeply punctate than the elytra, the punctures variolose, with a short impunctate dorsal line before the scutellum; the posterior angles less obtuse than in *C. dimidiatus*, almost right angles. Elytra very little longer than the thorax; the shoulders sometimes paler. Abdomen rather convex.

From Madagascar.

## 70. CARPOPHILUS NEPOS.

*C. dimidiato* valde affinis; minor, nigro-fuscus; elytris thorace longioribus, luteo-testaceis, lateribus et apice nigro-fuscis; abdominis segmentis expositis brevibus. Long. 1 lin., lat.  $\frac{1}{4}$  lin.

Habitat in Brasilia.

Very like *C. dimidiatus*. It is smaller; the two segments of the abdomen which are exposed are shorter than in it; the elytra about a third longer than the thorax, while in *C. dimidiatus* they are only very slightly longer; it is testaceous, with the margins and apex blackish brown.

Brazil. In the collection of Professor Boheman.

## 71. CARPOPHILUS SCHIÖDTIEL.

Parvus, oblongus, parallelus, convexus, subnitidus, punctatus, leviter pubescens, ferrugineo-piceus; elytris testaceis, apice anguste piceo-nigro; subtus ferrugineus. Long.  $\frac{3}{4}$  lin., lat.  $\frac{1}{3}$  lin.

Habitat in Pulo Milu.

Small, oblong, parallel, convex, punctate, somewhat shining and very slightly pubescent, ferrugineo-piceous; elytra testaceous, with the apex piceous black. Below ferruginous. Head punctate, with an impression on each side at the base of the epistome (which is prominent) ferruginous, with the centre of the forehead piceo-ferruginous. Eyes large; antennæ ferruginous. Thorax transverse, sides declinate, very little rounded at the margin, anterior angles nearly right angles, very little obtuse, the point of the angle not sharp, posterior angles rounded, apex bisinuate, base straight, truncate; piceo-ferruginous, disk darker than the sides. Scutellum subpentagonal, rounded at the apex, ferrugineo-piceous, impunctate, except very slightly at the base. Elytra nearly parallel, a little widest past the middle, about a half longer than the thorax, slightly declinate at the sides and somewhat depressed towards the suture, testaceous, with the apex for about a fifth of the length black; each elytron obliquely truncate at the apex; exterior apical

angles rounded, sutural angles obtuse. Exposed portion of abdomen short and abruptly attenuate, ferrugineo-piceous. Underside ferruginous. Metathorax with the epipleura rather wide and bent. Legs testacco-ferruginous.

From Pulo Milu. In the Museum at Copenhagen: kindly lent to me for description by Professor Schiödte.

## 72. CARPOPHILUS CYLINDRICUS.

Valde angustus, linearis, cylindricus, subopacus, pubescens, leviter parce punctatus, totus flavescens. Long.  $1\frac{1}{4}$  lin., lat.  $\frac{1}{3}$  lin.

Habitat in Taprobana.

Very narrow, linear, cylindrical, dull, pubescent, lightly and not thickly punctate, wholly testaceous yellow. Head impressed with a curved line in front; antennæ robust, club large. Thorax elongate, longer than broad, somewhat narrower in front, sides subparallel, all the angles rounded, impressed on each side towards the posterior angles, base slightly emarginate in the middle. Scutellum triangular, faintly and sparingly punctate and pubescent. Elytra of the same width as the thorax, nearly a half longer than the thorax, sides declinate and margined, expanded beyond the margin, apex truncate scarcely obliquely, exterior apical angles rounded, sutural a little obtuse. Abdomen pubescent, pygidium peaked. Legs robust.

Easily recognized by its long thread-like body. It clearly belongs to this section, although at first sight it looks as if its thorax was so long as almost to require another section for it. On measuring it, however, it will be found that this is an ocular deception; the thorax is actually as broad as long, or nearly so. It therefore comes literally within the section with a quadrate thorax.

From Ceylon. I owe this interesting species to the special researches of Mr. Nietner undertaken for the purpose of this Monograph.

## 73. CARPOPHILUS TENUIS.

*C. cylindrico* affinis; minor, minus convexus, minus punctatus, testaceo-brunneus, thorace haud postice impresso, elytris paulo brevioribus.

Habitat in China.

Allied to *C. cylindricus*. Smaller, not so convex, less punctate, testaceous brown; the thorax not impressed behind; the sides of the thorax more sloped away to the posterior angles, and the anterior angles more rounded, base bisinuate. Elytra a little shorter; in other respects as in that species.

From Hongkong.

(Subgenus NITOPS (*Nitidula*, by elision; and  $\omega\psi$ , the eye,—a *Nitidula* with notable eyes).)

Caput latum; oculis grandibus, fortiter et grosse granulatis. Abdominis segmentis expositis brevibus.

Cætera ut in *Carpophilo*.

The distinguishing marks of this subgenus are a broad head with large and coarsely granulated eyes. The exposed dorsal part of the abdomen is short, making the elytra look long. In *C. ophthalmicus* the mandibles on the right side are pointed, and on the left bidentate.

74. *CARPOPHILUS OPHTHALMICUS* (La Ferté). (Plate XXXIII. fig. 8.)

Oblongus, sat cylindrico-convexus, subopacus, ferrugineo-rufus, griseo pubescens, punctatus; thorace transversim oblongo. Long.  $1\frac{1}{4}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in Mexico et in Trinidad.

Oblong, rather cylindrico-convex, somewhat opaque, ferruginous red, griseo-pubescent, punctate. Head bi-impressed in front. Thorax transversely oblong, twice as broad as long, sides subparallel, declinate, all the angles rounded, apex slightly rounded, base truncate. Scutellum triangular, apex somewhat rounded. Elytra a half longer than the thorax, slightly wider at the base than the thorax, shoulders rounded, with the sides parallel and declinate, deeply margined, with the apex somewhat declinate and truncate nearly straight; exterior apical angles rounded, sutural angles nearly right angles. Legs stout; tarsi short and much dilated, except the last long and slender article.

From Mexico and Trinidad. Collected by M. Sallé.

75. *CARPOPHILUS SORDIDUS*.

Erichs. in Wieg. Arch. 92 (1847).

Oblongus, subconvexus, obscure castaneus vel niger, dense subtiliterque flavescente pubescens, crebre subtilissime punctatus; elytris dorso nigro-pubescentibus, callo humerali testaceo; ventre pedibusque castaneo-piceis. Long.  $1\frac{2}{3}$  lin., lat.  $\frac{3}{5}$  lin.

Habitat in Peruvia.

Oblong, subconvex, black or obscure chestnut, of fine and rather soft texture, thickly clothed with a fine olivaceous-flavescent pubescence, and thickly finely punctate, the pubescence and punctuation combined giving a soft silky look to the surface. Eyes smaller and less coarsely granulated than in *C. ophthalmicus*. Thorax transverse, broad, lightly convex, very finely and thickly punctate, the sides rapidly and abruptly declinate, all the angles obtuse and rounded. Scutellum rounded, subpentagonal. Elytra with the back sometimes darker in colour than the rest of the body, sometimes with the humeral callus testaceous. Abdomen, underside, and legs chestnut-piceous.

Erichson describes the elytra as having the back clothed with a black pubescence (nigro-pubescentibus). The specimens in the Berlin Museum do not bear out this; the disk of each elytron is somewhat darker than the rest of the body, so is the disk of the thorax, but the pubescence in all is of the same yellowish olivaceous hue. The humeral callus is not always lighter than the rest of the elytra.

From Bolivia, Peru, &c. In the Berlin and British Museums.

76. *CARPOPHILUS PUBESCENS*.

*C. sordido* affinis, ei simillimus statura et colore; angustior, thorace antice angustiore, lateribus citius declinatis, disco magis conico, angulis posticis minus late rotundatis, parce punctato; elytris parum brevioribus. Long.  $1\frac{1}{3}$  lin., lat.  $\frac{4}{7}$  lin.

Habitat in Taprobana.

Very like *C. sordidus*. The colour and general appearance of both is the same, but the form of the thorax is different. In *C. sordidus* it is transverse and broad, with the

sides turning down rapidly when near the margin; in *C. pubescens* the sides slope more gradually from the culminating ridge, giving its section somewhat of a conical form. In *C. sordidus* the thorax is dull and covered with pubescence, and very finely punctate; in *C. pubescens* it is not so dull, and larger punctures are scattered over it. The pubescence also lies in a different manner: in *C. sordidus* it is directed from the sides to a point immediately before the scutellum, while in *C. pubescens* it is directed from each side towards the middle, so that the hairs meet in a ridge all along the dorsal region. The elytra also, although narrower than in *C. sordidus*, are proportionally broader when compared with the breadth of the thorax; they are also proportionally shorter. The keel of the prosternum is narrow and bent in, instead of being broad at its apex; and the segments of the abdomen are so wide, that one of the chief generic characters of *Carpophilus*, viz. that the second and third segments of the abdomen are very short, is almost absent. The eyes too are smaller and not so coarsely granulated as in *C. ophthalmicus*.

From Ceylon. I owe this species to the kindness of Mr. Nietner and Count de Motschulsky.

(Subgenus ENDOMERUS (ἐνδον, within; and μέρος, a part,—in allusion to each of the last three segments of the abdomen retiring within the preceding segment).)

Corpus breve, convexum, subcylindricum. Abdomen segmentis ultimis tribus expositis, sed parum visis; segmentis singulis a præcedentibus intus susceptis.

The chief distinctions of this subgenus are, its having three exposed segments of the abdomen. Notwithstanding that there are three, each is so enclosed like the joints of a telescope within the preceding segment, that the whole are very short and scarcely visible. The body is short, thick, round, barreled, and cylindrical; and the elytra appear longer than usual, but this is merely an appearance due to the small portion of the abdomen which is visible.

#### 77. CARPOPILUS PIGER. (Plate XXXIII. fig. 3.)

Curtus, subcylindricus, obsesus, leviter punctatus, griseo-pubescent, castaneo-fuscus; ore, antennis pedibusque testaceis. Long.  $1-1\frac{1}{4}$  lin., lat.  $\frac{3}{4}$  lin.

Habitat in Guatemala.

Short, subcylindrical, obese, lightly punctate, griseo-pubescent, chestnut-brown. Head rounded, finely punctate, very faintly bi-impressed in front; mandibles, mouth, and antennæ testaceous. Thorax with the sides subparallel, all the angles rounded and declinate both in front and behind and at the sides. Scutellum rounded. Elytra declinate at the base towards the thorax and at the apex, longer than the thorax, but not a half longer, obliquely rounded at the apex, and with both the exterior apical angles and the sutural angles rounded. Abdomen finely punctate and finely pubescent, margins of the segments rufescent. Legs testaceous.

From Guatemala.

#### 78. CARPOPILUS SENEX.

Affinis *C. pigro*; subcylindrico-convexus, subopacus, fuscus, parce et sparsim longe

griseo-sericeo pubescens, haud punctatus, sed levissime subgranulatus, antennis pedibusque testaceis. Long. 1 lin., lat.  $\frac{2}{5}$  lin.

Habitat in Mexico.

Allied to *C. piger*. Not so convex, somewhat opaque, dark fuscous, and sparingly clothed with a long griseous silky pubescence, not punctate, but very faintly subgranulose,—the head and thorax bearing as it were marks of scales rubbed off, and the elytra somewhat aciculary granulose. Antennæ and legs testaceous. The last segment of the abdomen so much retracted within the penultimate segment as sometimes not to be visible.

From Mexico. Collected by M. Sallé.

#### 79. CARPOPHILUS LANGUIDUS.

Erchs. in Germ. Zeitschr. iv. 261 (1843).

*C. dorsalis* (Mus. Berol.).

Leviter convexus, sat brevis, fusco-testaceus, subtiliter punctatus; thorace transverso; elytris thorace sesqui longioribus, pallide testaceis, apice vittaque longitudinali fuscescentibus. Long. 1 lin., lat.  $\frac{2}{5}$ — $\frac{1}{2}$  lin.

Var. Testaceus, elytris pallidis.

Habitat in Columbia.

Short, moderately convex, fusco-testaceous, opaque, griseo-pubescent. Antennæ testaceous, club darker. Head faintly punctate. Thorax transverse, gently narrowed in front, strongly rounded on the sides, truncate at the apex, with all the angles obtuse and somewhat rounded, faintly punctulate. Scutellum densely punctulate. Elytra a half longer than the thorax, faintly punctate, pale livid testaceous, with an apical patch and a longitudinal fuscous stripe stretching obliquely inwards from within the shoulder to the apex; the outer margin also fuscous. Abdomen faintly punctulate, the pygidium subimpressed towards the apex. Legs pale.

It varies in colour, being in some instances testaceous, with pale elytra (probably immature). The abdomen is fuscous in both varieties, the last segment and the whole of the ventral and half of the dorsal penultimate segments being testaceous.

From Columbia.

(Subgenus ECNOMORPHUS.)

Motsch. Etud. Ent. vii. 42 (1858).

Corpus elongatum, depressum. Thorax basi elytris angustior. Elytra plus minusve elongata. Color obscurus, plus minusve niger vel piceus.

Body depressed and somewhat elongate. The thorax flat on the disk. Elytra wider than the base of the thorax. Colour obscure, more or less black or piceous.

The subgenus which I propose thus to characterize was first suggested by Count de Motschulsky as an asylum for his species *C. fulvipes*, which, however, does not belong to it. He formed it, as he says, "at the expense of the elongate and depressed *Carpophili* like *C. sexpustulatus*;" but *C. fulvipes* is not an elongate species, and its depression is

slight, and not very different from that of other species of the typical form of *Carpophilus*. It is different, however, with *C. sexpustulatus*, whose facies is sufficiently distinct from the other species to warrant the establishment of a subgenus for its reception. The facies results from the elongate and depressed form, the long clytra, and the short thorax, rounded behind.

M. de Motschulsky attempted to find characters drawn from the antennæ of *C. fulvipes* as well as the body, but in this he has failed.

The characters given by him are, the antennæ more elongate than in the other *Carpophili*. The club only slightly massive ("peu solide"), and composed of two parts distinctly separated, of which the apical contains two articles and the basal one article, while in the other species it is formed by four transverse articles solidly joined together. He figures (*loc. cit.*) the antennæ of both, and has also had the kindness to send me specimens of his *C. fulvipes* to show the difference in nature. A careful examination of these convinces me that he has been deceived by the accidental separation of the joints of the club. In one instance I have found the antennæ correspond to his figure; but the opposite antenna of the same individual otherwise placed has shown nothing different from the usual form of the antennæ of other *Carpophili*. The parts of the mouth, which are also quite correctly figured by M. de Motschulsky, show no deviation from the usual characters of these parts in other species. It is the form of the thorax and unusual length of the elytra which give its peculiar appearance to this section of the *Carpophili*, and therefore they seem to be the characters on which the subgenus should be founded. This will exclude *C. fulvipes*, which I have already described in what I consider its proper place.

#### 80. CARPOPHILUS SEXPUSTULATUS.

Erichs. in Germ. Zeitschr. iv. 263 (1843). Sturm, Deutschl. Ins. xv. 41 (1844). Erichs. Naturg. d. Ins. Deutschl. iii. 137 (1848).

*Nitidula 6-pustulata*, Fab. Ent. Syst. i. 1. 360. 1 (1792); Syst. El. i. 352. 25 (1801). Schönh. Syn. ii. 147. 59 (1808).

*Lyctus abbreviatus*, Panz. Faun. Germ. 24. 21 (1794).

*Ips abbreviata*, Duftsch. Faun. Austr. iii. 144 (1825). Sturm, Deutschl. Ins. xiv. 102, t. 186. fig. n, N (1839). Heer, Faun. Col. Helv. i. 416 (1841).

Elongatus, parallelus, depressus, parce pubescens, piceus, elytris singulis maculis tribus rufo-testaceis, una humerali, altera ante medium prope suturam, tertia pone medium versus marginem exteriorem. Long. 1-1½ lin., lat. ½ lin.

Habitat in Europa.

Elongate, parallel, depressed, moderately shining, with hoary, very fine, almost imperceptible pubescence, piceous, with three rufo-testaceous spots on the elytra. Antennæ reddish brown, with the club blackish. The head deeply punctate, with an arched oblique line (interrupted in the middle) between the eyes; the mouth reddish brown. Thorax somewhat narrower than the elytra, rounded on the sides, rather more narrowed behind than in front, apex and base moderately straightly truncate, anterior angles rounded,

Fig. 106.



posterior angles obtuse; the disk flat, depressed, not very thickly punctate, the sides more or less piceous. Scutellum rounded at the apex, with a line of punctures at the base. Elytra nearly twice as long as the thorax, flatly depressed, before and behind the middle slightly impressed, thickly punctate, an elongate spot on the shoulder, a second somewhat before the middle near the suture, and a third, smaller, behind the middle on the exterior margin, lighter or darker reddish yellow; the last spot is usually very much obliterated and scarcely perceptible, or wholly absent; sides deeply margined; apex obliquely truncate, its exterior angles rounded; the margin clear reddish brown. Abdomen very finely punctate; the margins of the segments semitransparent and ferruginous. Legs light or dark piceous.

Found throughout Europe, under the bark of trees, but not common in Britain.

Count de Motschulsky describes an East Indian species (*Etudes Ent.* vii. 43 (1858)) under the name of *Ecnomorphus biguttatus*, which he says is very closely allied to *C. sexpustulatus*, differing from it only in having a larger and more quadrate thorax, the sides of which are not rounded and not narrowed behind, and in the elytra having a testaceous spot in the middle. Judged of by these characters, his species can have little or no affinity with *C. sexpustulatus*, and more probably belongs to the subgenus *Myothorax*, and, as I have already suggested, may be a variety of *C. vittiger*, but the description is insufficient to allow me to deal with it. The name *biguttatus* also is preoccupied.

#### 81. CARPOPHILUS DEPLANATUS.

*Brachypeplus deplanatus*, Bohem. Ins. Caffr. i. 562 (1848).

Oblongus, depressus, niger vel nigro-piceus, subopacus; nigro pubescens, thoracis elytrorumque basi cinereo pubescens; labro, mandibulis, antennis basi pedibusque rufo-piceis; capite prothoraceque subtiliter crebre punctulatis; elytris longitudinaliter aciculatis. Long.  $1-1\frac{1}{4}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in Africa australi apud flumina Limpopo.

Small, oblong, depressed, black or nigro-piceous, subopaque, nigro-pubescent, with the base of the thorax and elytra cinereo-pubescent. Head shorter than broad, above slightly convex, black, opaque, faintly closely punctulate, almost glabrous. Labrum, mandibles, and palpi piceous. Eyes rounded, moderately convex, black. Antennæ rather short, rufo-piceous, sparingly pubescent; club rounded, nigro-fuscous. Thorax a half shorter than broad, above almost flat, faintly and closely punctulated, clothed (except at the base) with long black pubescence which lies directed forwards; the pubescence of the base is cinereous; lightly rounded, emarginate in front, with the anterior angles slightly projecting, obtuse; the sides slenderly reflexed, narrowly edged with ferruginous, somewhat widened immediately behind the apex, thence backwards almost straight; base truncate, posterior angles obtuse. Scutellum short, broad, with the apex slightly rounded, faintly and thickly punctulate. Elytra a half longer than the thorax and not broader than its base, almost glabrous, faintly, closely, and irregularly aciculary punctate, the punctuation longitudinal, clothed (except at the base, which has cinereous pubescence) with long black pubescence lying directed backwards; truncate in front, the sides

not widened, the apex truncate; shoulders not prominent, almost right-angled. Body below black, slightly shining, rather closely punctulated, slenderly cinereo-pubescent. Legs rufo-piceous, obsolete punctulate.

This has been erroneously described as a *Brachypeplus* by Professor Boheman. He has had the kindness to send me the type, and I am enabled to say that it is undoubtedly a *Carpophilus* of the narrow section, and coming near *C. sexpustulatus*. It may be readily distinguished from any similar species by the posterior angles of the thorax, which are cut off, so that they have two posterior angles on each side as it were. The long black pubescence, directed forwards on the thorax and backwards on the elytra, is another character of ready application.

From the banks of the river Limpopo in South-east Africa.

## 82. CARPOPHILUS BRACHYPTERUS.

Erichs. in Germ. Zeitschr. iv. 263 (1843).

*Nitidula brachyptera*, Say, Journ. Acad. Nat. Sc. Philad. v. 183. 10 (1827).

*Carpophilus carbonatus*, Leconte, Coleopt. of Kansas and East. Mexico (Smithsonian Contrib.), 6 (1859).

*Ips atrata* (Dej. Cat. 134 (1837)).

*Carpophilus humilis*, Erichs. in Germ. Zeitschr. iv. 262 (1843).

Oblongus, subdepressus, subnitidus, parcius pubescens et punctatus, textura molli, piceo-niger, antennis basi piceis; thorace elytris angustiore, lateribus et angulis rotundatis; elytris subtiliter punctulatis, thorace duplo longioribus. Long.  $1\frac{1}{4}$  lin., lat.  $\frac{1}{2}$  lin.

Habitat in America boreali.

Allied to *C. sexpustulatus*; oblong, subdepressed, piceous black, sparingly punctate and pubescent, somewhat shining, texture soft. Head slightly raised on the vertex and in front. Antennæ piceous at the base. Thorax narrower than the elytra, transversely subquadrate, more than a half shorter than broad, all the angles broadly rounded, the apex scarcely emarginate, the margin of the sides narrow. Scutellum triangular, somewhat rounded at the apex, smooth, shining, and almost impunctate, there being merely two or three punctures on the disk. Elytra finely, not very closely punctate, twice as long as the thorax, sides distinctly margined and canaliculated, widest a little before the middle; apex obliquely truncate, exterior apical angles nearly right angles. Shoulders rather prominent. Legs piceous.

The colour varies from piceous or purplish black to pure black. The length of the elytra seems greater in some specimens than in others, and the thorax seems to vary slightly in its proportions. These variations, however, are merely apparent, not real. The thorax, for instance, in some specimens seems widest before the middle, in others widest behind it; but this depends upon the angle of inclination at which the thorax stands. In the same way, a careful measurement of the comparative length of the thorax and elytra shows that the proportions are the same even in those specimens in which the elytra seem longest.

An examination of Dr. Leconte's type of *C. carbonatus*, which he kindly forwarded to me, has satisfied me that it is not different from Say's *N. brachyptera*, and I can find no difference between it and Erichson's *C. humilis*. I am inclined to think that in

recording in his Monograph *C. brachypterus*, Say, as a different species from *humilis*, Erichson had taken it on trust. He gives no description of *brachypterus*, merely referring to Say's paper, but describes the same species as new under the name of *C. humilis*.

From North America.

83. *CARPOPHILUS XANTHOPTERUS* (Mus. Berl.).

Elongatus, angustus, oblongus, parallelus, subdepressus, subopacus, punctatus, parce pubescens, castaneus vel nigro-fuscus, capite dilutiore, elytris testaceo-castaneis. Long.  $1\frac{1}{8}$  lin., lat.  $\frac{1}{3}$  lin.

Patria ignota.

Narrow, elongate, oblong, parallel, subdepressed, subopaque, punctate, sparingly pubescent, chestnut or nigro-fuscous, the head paler, the elytra testaceous chestnut-coloured. Head rather lightly punctate, impressed transversely in front. Thorax transverse, somewhat rounded on the sides, especially behind, thickly punctate, the disk subdepressed, with a transverse impression behind the middle, and there more strongly punctate; the base as well as the sides margined, the posterior angles somewhat explanate and rounded, the anterior angles declinate and nearly right angles. Scutellum rounded at the apex, shining, impressed in the middle at the base. Elytra almost a half longer than the thorax, parallel, less thickly punctate, the sides declinate and margined, the disk unequally impressed, transversely impressed at the apex, which is somewhat obliquely truncate on each elytron, the exterior apical angles rounded. Abdomen above very faintly punctate. Below paler chestnut, almost testaceo-piceous. Legs of the same colour.

Country unknown. A single specimen was presented to me by Dr. Schaum, and is now placed in the British Museum. It stands in the Berlin Museum under the name which I have preserved.

(Subgenus *MICROXANTHUS* (*μικρὸς*, small; *ξανθός*, yellow).)

Corpus parvum, depressum, lineare. Color plus minusve testaceus.

Body small, depressed, linear. Colour more or less testaceous.

84. *CARPOPHILUS TEMPESTIVUS*.

Erichs. in Germ. Zeitschr. iv. 260 (1843).

Parvus, elongatus, angustulus, fere linearis, subdepressus, parce subtilissimeque pubescens, testaceus, subnitidus, elytris sutura apiceque nigro marginatis. Long. 1 lin., lat.  $\frac{1}{3}$  lin.

Var. A. Elytris basi etiam nigricante.

Var. B. (*C. terminatus* (Berl. Mus.)) Elytris apice solum nigro marginatis.

Habitat in Cuba et partibus vicinis Americæ.

Small, elongate, subdepressed, very shortly and thinly clothed with fine pubescence, somewhat shining, testaceous. Antennæ testaceous; club black. Head sparingly and finely punctate, obsoletely foveolate on each side in front. Thorax of the breadth of the

elytra, not narrowed in front, subdepressed, finely punctate, scarcely rounded at the sides; apex truncate; base obliquely truncate on each side, both posterior and anterior angles obtuse. Scutellum triangular, with the apex rounded; finely and sparsely punctate. Elytra almost a half longer than the thorax, subdepressed, finely punctate, deeply margined on the sides, which are slightly rounded, the suture and apex edged with black; apex of each elytron slightly obliquely truncate. Abdomen very faintly punctate.

From Cuba and the neighbouring parts of America.

#### 85. CARPOPHILUS OCHRACEUS.

Erichs. in Germ. Zeitschr. iv. 260 (1843).

Oblongus, parum convexus, testaceus, densius griseo pubescens; thorace transverso, elytris thorace duplo longioribus. Long.  $1\frac{1}{4}$  lin., lat.  $\frac{1}{3}$  lin.

Habitat in Brasilia.

Oblong, slightly convex, very slightly shining, griseo-pubescent, pale testaceous. Head faintly and thickly punctate, marked in front on each side with a minute fovea. Thorax of the breadth of the elytra, transverse, rounded on the sides, somewhat narrowed in front, truncate at the apex, with all the angles obtuse, slightly transversely convex, faintly punctate. Scutellum densely punctate. Elytra twice as long as the thorax, faintly punctate. Abdomen faintly punctate.

From Brazil. In the Berlin collection.

#### 86. CARPOPHILUS FLAVIDUS.

Fairm. Essai sur les Coléoptères de la Polynésie, Rev. et Mag. de Zool. June 1849, 26.

"Pallide flavus, oblongus, depressus, parce pubescens; thorace transverso, angulis posticis rectis; elytris thorace duplo longioribus. Long.  $1\frac{1}{2}$  lin.

"Habitat in Tahiti."

Oblong, depressed, pale yellow, slightly shining, with very short and sparing golden pubescence. Head, thorax, and elytra finely and thickly punctate. Head with a small impression in front on each side. Thorax transverse, with the sides slightly rounded, posterior angles right angles. Scutellum more finely punctate than the elytra, which are twice as long as the thorax. Abdomen scarcely visibly punctate.

Allied to *C. ochraceus* of Erichson, from which it is distinguishable by its pale colour and by the posterior angles of the thorax being pointed.

From Tahiti. In M. Deyrolle's collection.

#### 87. CARPOPHILUS MARGINATUS.

Erichs. in Germ. Zeitschr. iv. 262 (1843).

*C. minutus*, Melsh. Proc. Acad. Sc. Philad. ii. 105 (1846).

Parvus, breviusculus, subdepressus, subtiliter punctatus, saturate testaceus; thorace antrosum angustato elytris que fortius marginatis, his apice nigro limbatis. Long. 1 lin., lat.  $\frac{1}{3}$  lin.

Habitat in Carolina et partibus meridionalibus Americæ borealis.

Small, rather short, subdepressed, scarcely shining, finely punctate and thinly griseo-pubescent, deep testaceous. Head rather large, densely and finely punctate, slightly impressed on each side in front. Thorax narrowed in front, with the sides nearly straight, emarginate at the apex, truncate at the base, with the anterior angles nearly right angles and the posterior angles acute; densely and finely punctate, with the lateral margins distinct and reflexed. Scutellum broad, subpentagonal, thickly punctate. Elytra broad, a half longer than the thorax, closely faintly punctate, with the apex edged with black or brown, the lateral margin distinct and reflexed; apex of each elytron obliquely truncate; exterior apical angles sharply rounded. Abdomen finely punctate.

This species has a good deal of the short broad form of *C. antiquus*, and was mistaken by Melsheimer for a variety of it. It is not shining like that species, but has considerable affinity to it, and should perhaps have been placed beside it rather than here.

From Carolina and other southern districts of North America.

#### 88. CARPOPHILUS DISCOIDEUS.

Leconte, in Proc. Acad. Nat. Sc. Philad. March 1858, p. 62 (1858).

Forsan mas *C. caudalis*, Leconte, *loc. cit.*: vide *C. CAUDALIS*, *ante*.

Oblongus, fere depressus, piceus, nitidus, subtiliter pubescens, elytris macula testacea triangulari, postice truncata, antice attenuata, utrinque ornatis; pedibus antennisque rufis, his clava paulo infuscata. Long.  $\frac{9}{10}$  lin.

Habitat apud flumina Colorado in California.

Oblong, almost depressed, piceous, shining, finely pubescent; antennæ rufous, with a fuscous club. Thorax short, sides rounded, more faintly punctate. Elytra twice as long as the thorax, more strongly margined and more faintly punctulate, with a testaceous patch of a triangular form, truncate behind and attenuated in front on each side. Legs rufous.

Somewhat allied to *C. marginatus*, Er., but larger, more regularly oblong, and more flattened. Dr. Leconte suggests that it may be the male of *C. caudalis*, which in every respect corresponds with it except in having three segments of the abdomen exposed instead of two.

Found near the Colorado River in California. In Dr. Leconte's collection.

#### 89. CARPOPHILUS USTULATUS.

Parvus, elongato-ovatus, depressus, sat nitidus, levissime punctatus, ferrugineus, elytris apice late indeterminate nigro-fusco. Long. 1 lin., lat.  $\frac{2}{3}$  lin.

Habitat in Nova Guinea.

Small, elongate-ovate, depressed, somewhat shining, very finely punctate, with scarcely any pubescence, ferruginous or piceo-ferruginous, with the apex of the elytra blackish. Head broad, very finely punctate, smooth, with very slight impressions at the base of the epistome; eyes large. Thorax transverse, broader than long, slightly convex, even, very little narrower in front than behind, the sides slightly rounded, apex slightly emarginate and bisinuate, gently and slightly projecting in the middle, anterior angles rounded, pos-

terior angles slightly obtuse, base bisinuate, all the margins paler than the disk. Scutellum rather large, subpentagonal, slightly punctate, rather darker than the neighbouring parts of the elytra. Elytra rather longer but scarcely broader than the thorax, somewhat attenuated behind, widest a little before the middle, sides gently rounded, the humeral angles projecting; finely punctate, the punctuation fainter towards the apex; the base is pale ferruginous, passing gradually into a dark chestnut, the dark portion covering more than the half of the elytra; the apex of each elytron truncate very obliquely; exterior apical angles rounded, sutural angles obtuse. Abdomen somewhat convex, more finely punctate, and with some fine rufous pubescence, darker at the apex. Legs rufous.

From Dorey and New Guinea. Collected by Mr. Wallace.

#### 90. CARPOPHILUS GENTILIS.

Elongatus, oblongus, depressus, subnitidus, leviter punctatus, subtilissime flavo pubescens, flavescens. Long.  $1\frac{1}{4}$  lin., lat.  $\frac{1}{3}$  lin.

Habitat in Victoria in Australia.

Elongate, oblong, depressed, somewhat shining, lightly punctate, very finely flavo-pubescent, yellowish. Head darker, subfuscous, lightly obliquely impressed on each side; antennæ with club obscure. Thorax rufo-flavescent, broader than long, with the disk broadly flat, the sides gently rounded both before and behind; anterior angles slightly obtuse, posterior somewhat obtusely rounded; apex scarcely emarginate, base straight, truncate, finely punctate and pubescent, narrower than the base of the elytra. Scutellum rounded at the apex, flat, shining at the margin, impressed at the base, and punctate in the middle. Elytra flat, testaceous, the sides as seen from above parallel, narrowly declinate, very slightly gently rounded, apex of each elytron truncate slightly obliquely; finely punctate and pubescent. Abdomen more pubescent, rather darker testaceous than the elytra.

From Victoria in Australia.

#### 91. CARPOPHILUS FRIVOLUS.

Minutus, elongato-oblongus, depressus, subnitidus, leviter punctatus et pubescens, testaceus, capite elytrorumque apice et regione scutellari plus minusve piceis. Long. 1 lin., lat.  $\frac{1}{4}$  lin.

Habitat in Victoria in Australia.

Small, elongate-oblong, depressed, somewhat shining, faintly and not closely punctate, slightly testaceo-pubescent; testaceous. Head piceous, with the epistome very little advanced, slightly longitudinally impressed on each side. Thorax transversely oblong, apex and base truncate straight, sides subparallel, slightly rounded in front and behind, anterior angles declinate and obtuse, posterior angles rounded. Scutellum triangular, testaceo-piceous, somewhat shining, very faintly punctate and pubescent. Elytra wider and about a half longer than the thorax, humeral angles distinct, sides nearly parallel, a little wider towards the apex; more sparsely punctate than the thorax; apex somewhat obliquely truncate, and more or less piceous or testaceo-piceous; the scutellar region

is also sometimes piceous. Abdomen with the penultimate segment long. Tarsi very slightly dilated.

From Melbourne in Victoria.

## 92. CARPOPHILUS INCONSPICUUS.

Minutus, oblongo-ovatus, subdepressus, levissime sparsim punctatus et pubescens, supra subnitidus, subtus nitidior, flavo-testaceus, elytris luteis, apice et basi versus scutellum saturationibus. Long.  $\frac{2}{3}$ – $\frac{3}{4}$  lin., lat.  $\frac{1}{4}$  lin.

Habitat in insula Batchiana.

Minute, oblong-ovate, subdepressed, very finely and sparsely punctate and very finely pubescent, somewhat shining above, more so below, flavo-testaceous, with the elytra luteous, the apex and base about the scutellum and the scutellum itself a little darker. Head with a slight depression on each side behind the epistome; antennæ rather long, testaceous, with the club dusky. Thorax transverse, depressed, disk flat, a little broader in front than behind, sides gently rounded, apex not emarginate, base truncate, anterior angles somewhat obtuse, posterior angles very obtuse and almost rounded. Scutellum large, triangular, smooth, piceo-testaceous. Elytra a little longer than the thorax, wider at the base than the base of the thorax, sides subparallel, widest behind the middle, margined and canaliculate; disk depressed, sloping a little towards the suture; sparsely and finely punctate and sparingly finely pubescent; apex of each elytron obliquely truncate, exterior apical angles rounded, sutural angles obtuse; the scutellar region and the outer margin and apex rather darker than the rest of the piceo-testaceous surface. Abdomen still more finely punctate and pubescent than the elytra. Tarsi not very testaceous.

From the island of Batchian. Collected by Mr. Wallace.

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### *Species mihi invisæ.*

I have not seen this species, and the description is scarcely sufficient to indicate its proper place; I have therefore merely added it as an appendix to the whole genus.

## 93. CARPOPHILUS APICALIS.

Leconte, Coleopt. Kansas and E. Mexico, (Smithson. Contrib.) 6 (1859).

“Oblongus, piceo-niger, minus subtiliter punctatus et flavo pubescens; elytris rufis, circa scutellum et ad apicem extrorsum oblique infuscatis; pedibus antennisque testaceis. Long.  $1\frac{1}{4}$  lin.

“Habitat in Georgia apud flumina Platte in America boreali.

“Oblong, piceous black, rather faintly punctate, and with a yellow pubescence. Thorax moderately convex, not a half shorter than its breadth, the sides rounded. Elytra a half longer than the thorax, rufous, oblique, infuscated about the scutellum and exteriorly outwards to the apex. Legs and antennæ testaceous.

“From Platte River in Georgia in North America.”

I have not seen this species, and have merely reproduced Dr. Leconte's description.

*Dichotomous Table.*

	Three dorsal segments of abdomen exposed . . . . .	1
	Two dorsal segments of abdomen exposed . . . . .	11
1	{ Elytra not overshadowing the exposed dorsal segments of abdomen . . . . .	2
	{ Elytra almost concealing the exposed dorsal segments of abdomen . . . . .	9
2	{ Body elongate, somewhat depressed. Elytra partly red . . . . .	3
	{ Body rather broad, convex. Elytra not marked with red . . . . .	4
3	{ Elytra wholly red except the apex, which is black . . . . .	<i>rubripennis.</i>
	{ Elytra with a red triangular patch . . . . .	<i>caudalis.</i>
4	{ Body above shining and glabrous . . . . .	5
	{ Body above semiopaque, shagreened . . . . .	<i>rubiginosus.</i>
5	{ Fawn-coloured, with black or brown markings . . . . .	<i>adumbratus.</i>
	{ Black or piceous brown . . . . .	6
6	{ Thorax with a well-marked depression near the posterior angles . . . . .	7
	{ Thorax without a well-marked depression near the posterior angles . . . . .	8
7	{ Thorax with the anterior angles pale . . . . .	<i>foveicollis.</i>
	{ Thorax with the anterior angles not pale . . . . .	<i>humeralis.</i>
8	{ Colour black, with legs and base of antennæ yellow . . . . .	<i>nitidus.</i>
	{ Colour piceous brown, with margins of thorax paler . . . . .	<i>discolor.</i>
9	{ Colour brown, with the elytra more or less livid testaceous . . . . .	<i>languidus.</i>
	{ Colour brown . . . . .	10
10	{ Thorax with posterior angles rounded . . . . .	<i>piger.</i>
	{ Thorax with posterior angles obtuse . . . . .	<i>senex.</i>
11	{ Eyes moderate . . . . .	12
	{ Eyes large and prominent. Body convex and oblong. Elytra long . . . . .	88
12	{ Texture hard, glabrous, shining, not shagreened . . . . .	13
	{ Texture not hard and glabrous . . . . .	18
13	{ Thorax decidedly narrower at the apex than behind . . . . .	14
	{ Thorax transversely quadrate, nearly as broad in front as behind . . . . .	17
14	{ Thorax with a punctate impression near the posterior angles . . . . .	15
	{ Thorax without a punctate impression near the posterior angles . . . . .	16
15	{ Form fusiform. Thorax wider at the base than at the middle . . . . .	<i>marginellus.</i>
	{ Form cuneiform. Thorax not wider at the base than at the middle . . . . .	<i>cuneiformis.</i>
16	{ Thorax dark brown. Elytra slightly paler . . . . .	<i>succisus.</i>
	{ Thorax reddish. Elytra darker . . . . .	<i>rubescens.</i>
17	{ Colour dark chestnut; apical half of elytra darker . . . . .	<i>antiquus.</i>
	{ Colour light ferruginous; apical margin only of elytra slightly darker . . . . .	<i>ferrugineus.</i>
18	{ Body depressed. Texture various . . . . .	19
	{ Body more or less convex. Texture shagreened . . . . .	39
19	{ Texture leathery, or slightly shagreened. General colour black or piceous . . . . .	20
	{ Texture fine, size small. General colour more or less testaceous . . . . .	31
20	{ Thorax not narrower at the base than the elytra . . . . .	21
	{ Thorax narrower at the base than the elytra . . . . .	26
21	{ Elongate-oblong. Elytra somewhat leathery in texture . . . . .	22
	{ Subfusiform. Texture generally faintly shagreened and somewhat shining . . . . .	23
22	{ Thorax piceous and elytra black . . . . .	<i>corticinus.</i>
	{ Thorax and elytra both black . . . . .	<i>compressus.</i>

23	{ Thorax with all the angles rounded . . . . .	<i>planatus.</i>
	{ Thorax with not all the angles rounded . . . . .	24
24	{ Base of thorax scarcely or not at all sinuate. Elytra black . . . . .	<i>fulvipes.</i>
	{ Base of thorax sharply sinuate near posterior angles. Elytra purplish brown . . . . .	25
25	{ Anterior angles of thorax obtuse and not rounded . . . . .	<i>lacertosus.</i>
	{ Anterior angles of thorax rounded . . . . .	<i>purpureipennis.</i>
26	{ Body large and elytra not very long . . . . .	<i>rufitarsis.</i>
	{ Body long and narrow and elytra long . . . . .	27
27	{ Not wholly black or piceous black . . . . .	28
	{ Wholly black or piceous black . . . . .	30
28	{ Colour of body black or piceous, with elytra testaceous or piceo-testaceous . . . . .	29
	{ Colour of body black or piceous, with pale markings on elytra . . . . .	<i>sempustulatus.</i>
29	{ Posterior angles of thorax obliquely truncate . . . . .	<i>ligneus.</i>
	{ Posterior angles of thorax rounded . . . . .	<i>xanthopterus.</i>
30	{ Elytra broader than the base of the thorax and somewhat variolosely punctate . . . . .	<i>brachypterus.</i>
	{ Elytra not broader than the base of the thorax, and longitudinally aciculary punctate . . . . .	<i>deplanatus.</i>
31	{ Elytra wholly testaceous . . . . .	32
	{ Elytra not wholly testaceous . . . . .	34
32	{ Scutellum densely punctate . . . . .	33
	{ Scutellum scarcely punctate (only two or three punctures at the base) . . . . .	<i>gentilis.</i>
33	{ Posterior angles of thorax obtuse . . . . .	<i>ochraceus.</i>
	{ Posterior angles of thorax right angles . . . . .	<i>flavidus.</i>
34	{ Elytra piceous, with a triangular testaceous patch . . . . .	<i>discoideus.</i>
	{ Elytra testaceous, with portions darker . . . . .	35
35	{ Elytra testaceous, with a distinct black or dark piceous apical margin . . . . .	36
	{ Elytra testaceous, with the apex or other portions duller . . . . .	37
36	{ Black or piceous apical margin of elytra narrow . . . . .	<i>tempestivus.</i>
	{ Black or piceous apical margin of elytra broad . . . . .	<i>ustulatus.</i>
37	{ Elytra lurid testaceous, with scutellar region and apical margin darker . . . . .	<i>inconspicuous.</i>
	{ Elytra with the apex duller testaceo-piceous . . . . .	38
38	{ Comparatively broad thorax with posterior angles rectangular . . . . .	<i>marginatus*.</i>
	{ Rather narrow thorax with posterior angles rounded . . . . .	<i>frivulus.</i>
39	{ Thorax considerably narrower in front than behind, its sides rounded . . . . .	40
	{ Thorax transversely subquadrate, not narrower, or not much narrower, in front than behind; sides subparallel, body subcylindrical . . . . .	70
40	{ More or less elongate, subdepressed. Thorax slightly convex . . . . .	41
	{ Not elongate—convex, broad, or fusiform . . . . .	47
41	{ Decidedly elongate and large in size (upwards of 2 lines in length) . . . . .	42
	{ Moderately elongate and not so large . . . . .	43
42	{ Black, margins of thorax piceous and subserrated, legs black or dusky piceous . . . . .	<i>niger.</i>
	{ Brownish black, margins of thorax ferruginous and only slightly or not at all rough, legs ferruginous . . . . .	<i>Triton.</i>
43	{ Black, with shoulders of elytra rufescent . . . . .	44
	{ Black, with shoulders of elytra not rufescent . . . . .	45

\* *C. marginatus*, but for its comparatively soft texture and dulness, might be sought for alongside of *C. antiquus* and *C. ferrugineus*. It has much of their form, but can be distinguished by the above characters and its smaller size.

44	{ Thorax not conspicuously marked with depressions . . . . .	<i>lugubris.</i>
	{ Thorax conspicuously marked with depressions . . . . .	<i>brevipennis.</i>
45	{ Thorax coarsely punctate. Elytra leathery-looking and more finely punctate and pubescent . . . . .	<i>tristis.</i>
	{ Thorax and elytra equally coarsely punctate and pubescent. Elytra not leathery-looking . . . . .	46
46	{ Anterior angles of thorax rounded . . . . .	<i>Morio.</i>
	{ Anterior angles of thorax obtuse . . . . .	<i>funereus.</i>
47	{ Body convex, broad, and somewhat tending to squareness . . . . .	48
	{ Body convex, fusiform . . . . .	53
48	{ Legs wholly testaceous . . . . .	49
	{ Legs not testaceous . . . . .	50
49	{ Margins of thorax slightly sinuated and anterior angles rounded . . . . .	<i>tectus.</i>
	{ Margins of thorax not sinuated, and anterior angles obtuse . . . . .	<i>flavipes.</i>
50	{ Punctuation variolose (when seen under the microscope) . . . . .	<i>variolosus.</i>
	{ Punctuation simple . . . . .	51
51	{ Large and obese. Elytra thickly punctate; suture not distinctly raised . . . . .	52
	{ Moderate. Elytra smooth, somewhat shining, and sparsely punctate; suture raised . . . . .	<i>puncticeps.</i>
52	{ Margins of thorax and elytra much reflexed . . . . .	<i>obesus.</i>
	{ Margins of thorax and elytra not much reflexed . . . . .	<i>Hoffmannseggii.</i>
53	{ Colour dark, obscure, except when there are markings on the elytra . . . . .	54
	{ Colours bright. Thorax or elytra, or both, bright rufous . . . . .	68
54	{ Elytra bearing pale spots or markings . . . . .	55
	{ Elytra not bearing spots or markings . . . . .	62
55	{ Marking on elytra consisting of a single spot or patch on each elytron . . . . .	56
	{ Marking on elytra consisting of more than a single spot or patch on each elytron . . . . .	61
56	{ Marking consisting of a central spot . . . . .	57
	{ Marking consisting of a longitudinal fascia next the suture and towards the apex . . . . .	<i>ligatus.</i>
57	{ Spot regularly round or oval . . . . .	<i>bipustulatus.</i>
	{ Spot not regular in outline . . . . .	58
58	{ Body narrow and comparatively depressed . . . . .	<i>binotatus.</i>
	{ Body not narrow and not depressed . . . . .	59
59	{ Posterior margin of spot running obliquely outwards and forwards . . . . .	60
	{ Posterior margin of spot rounded . . . . .	<i>biguttatus.</i>
60	{ Spot with the anterior and posterior sides nearly parallel . . . . .	<i>bisignatus.</i>
	{ Spot with the anterior and posterior sides not parallel, inner side smallest . . . . .	<i>bifenestratus.</i>
* 61	{ Each elytron with a pale patch on the shoulder and another at the sutural apical angle . . . . .	<i>quadrisignatus.</i>
	{ Each elytron with a pale patch on the shoulder and the whole of the apex pale . . . . .	<i>hemipterus.</i>
62	{ Body black, and elytra tinged more or less with purplish brown . . . . .	63
	{ Black or brassy . . . . .	64
63	{ Elytra flat and silky . . . . .	<i>sericeus.</i>
	{ Elytra convex . . . . .	<i>obsoletus.</i>
64	{ Slightly greenish brassy . . . . .	<i>chalybeus.</i>
	{ Wholly black . . . . .	65
65	{ Thorax level and flat on the middle of the disk . . . . .	<i>Bakewellii.</i>
	{ Thorax not flat on the disk . . . . .	66

66	{	Finely punctate and small in size . . . . .	<i>dolens.</i>
	{	Very coarsely punctate and not below the average size . . . . .	67
67	{	Posterior angles projecting backwards, and sides in front of them sinuate . . .	<i>cribratus.</i>
	{	Posterior angles nearly rectangular, with the point rounded, posterior margins subparallel . . . . .	<i>Fusus.</i>
68	{	Wholly bright rufous . . . . .	<i>rufus.</i>
	{	Not wholly bright rufous . . . . .	69
69	{	Thorax bright rufous. Elytra blue-black . . . . .	<i>melanopterus.</i>
	{	Thorax dark or black. Elytra rufous . . . . .	<i>pallipennis.</i>
70	{	General colour more or less testaceous . . . . .	71
	{	General colour brown . . . . .	76
71	{	Narrow and thread-like . . . . .	72
	{	Subcylindrical, but not so narrow as a thread . . . . .	73
72	{	Very pubescent and punctate . . . . .	<i>cylindricus.</i>
	{	Shining, very little punctate or pubescent . . . . .	<i>tenuis.</i>
73	{	Elytra slightly paler than thorax or abdomen . . . . .	74
	{	Elytra testaceous, with the scutellar region fuscous . . . . .	<i>australis*.</i>
74	{	Very pubescent and much punctate. Thorax with a short, dorsal, raised, smooth line in front of the scutellum . . . . .	<i>luridus.</i>
	{	Not so much punctate or pubescent, and without a dorsal line . . . . .	75
75	{	Very finely punctate and small in size . . . . .	<i>pallescent.</i>
	{	Moderate in size, punctuation coarser . . . . .	<i>mutilatus.</i>
76	{	Colour fuscous, dark brown or black. Elytra very short . . . . .	77
	{	Thorax fuscous, but not wholly fuscous. Elytra only moderately short . . .	82
77	{	General colour black . . . . .	78
	{	General colour fuscous . . . . .	79
78	{	Wholly black . . . . .	<i>truncatus.</i>
	{	Black, with a rufescent spot on the shoulder . . . . .	<i>angustatus.</i>
79	{	Elytra with a pale spot in the centre . . . . .	<i>notatus.</i>
	{	Elytra without any spot in the centre . . . . .	80
80	{	With fine and silky pubescence. Colour lurid testaceo-fuscous . . . . .	<i>pilosellus.</i>
	{	Coarsely pubescent, fuscous . . . . .	81
81	{	Last segments of abdomen rather long . . . . .	<i>dimidiatus.</i>
	{	Last segments of abdomen short . . . . .	<i>nepos.</i>
82	{	Elytra testaceo-rufous, with the apex darker . . . . .	83
	{	Elytra fuscous, marked with rufous . . . . .	84
83	{	Margins of thorax ferruginous . . . . .	<i>ochropterus.</i>
	{	Margins of thorax not ferruginous . . . . .	<i>fumatus.</i>
84	{	Body glabrous or nearly so . . . . .	85
	{	Body subopaque and pubescent . . . . .	86
85	{	Of moderate size. Base of elytra rufous, enclosing a round dark spot . . .	<i>oculatus.</i>
	{	Of small size. Elytra pale testaceous, with a narrow black apical margin . .	<i>Schiodtei.</i>
86	{	Base of elytra rufous . . . . .	87
	{	Base of elytra not rufous. A rufous spot in the middle of each elytron . . .	<i>mutabilis.</i>

\* *C. australis* may perhaps claim to enter into the same group as *C. hemipterus*; in which case it would be distinguished from *C. quadrisignatus* and *C. hemipterus* by the elytra being wholly pale, except the scutellar region and a space behind the shoulder, which are fuscous.

- 87 { A sutural rufous vitta and a spot near the outer margin on each elytron; sides of thorax and elytra each slightly convex. . . . . *maculatus*.  
 { A sutural rufous vitta usually on each elytron; sides of thorax and elytra sub-parallel. [N.B. This species is subject to much variation in colour.] . . . *vittiger*.  
 88 { Bright rufous . . . . . *ophthalmicus*.  
 { Lurid testaceo-piceous . . . . . 89  
 89 { Pubescence on thorax radiating to a point on base immediately before the scutellum *sordidus*.  
 { Pubescence on thorax pointing from the sides to the middle . . . . . *pubescens*.

*Species mihi ignotæ.*

- Wholly black . . . . . *immaculatus*.  
 Piceous black. Elytra red, with a triangular fuscous space from the apex to the scutellum . . . . . *apicalis*.

Genus STAUROGLOSSICUS (σταυρός, a cross; γλωσσικός, appertaining to the tongue,—in allusion to the form of the ligula).

Abdomen segmentis tribus primis æqualibus, cæteris brevioribus, sed haud brevibus. Maxillæ latissimæ, subquadratae. Ligula alis horizontalibus, antice truncatis. Cætera ut in *Carpophilo*.

Body flat and depressed. Mandibles broadly bidentate. The lobe of the maxillæ more than usually broad, and the membranous lobes of the ligula transverse and truncate in front. They are constructed on the same principle as in the rest of the *Carpophilæ*: but in the latter the lobes project obliquely forward on each side; here they are as it were pushed back into a straight line, giving the lobe something of the appearance of a hammer, or of the eyes of the dipterous genus *Diopsis*. Mentum deeply emarginate. Abdomen wedge-shaped, with the first, second, and third segments nearly equal and shorter than the remaining two, which are long and nearly equal in length; fimbriæ scarcely apparent, the suture between the dorsal and ventral segments being on the sides. In other respects the same as *Carpophilus*.

*Position and Affinities*.—CARPOPHILUS. STAUROGLOSSICUS. EIDOCOLASTUS.  
 TRIMENUS.

1. STAUROGLOSSICUS TERMINALIS (Mus. Berol.). (Plate XXXIII. fig. 4\*.)

Elongatus, subcuneiformis, plano-depressus, punctatus, nitidus, glaber, rufo-testaceus, capite et elytrorum sutura apiceque nigricantibus. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{3}{5}$  lin.

Habitat in Victoria in Nova Hollandia.

Elongate, subcuneiform, flat, depressed, punctate, shining, glabrous, rufo-testaceous, with the head, and the suture and apex of the elytra, black, or passing into black. Head very faintly punctate, lightly bi-impressed in front. Thorax transverse, broader than long, with the disk flat, distinctly punctate, with the sides declinate, lightly rounded, the

\* By one of those unhappy accumulations of ill luck which sometimes happen even with the best artists and the best workmen, the figure of this species in the Plate quoted is neither well drawn nor rightly coloured. It is not flat enough, nor sufficiently wedge-shaped, nor wide enough in front; and instead of being brown as coloured, the insect is bright testaceous, with the apex of the elytra &c. black.

posterior angles obtusely rounded, the anterior inflexed and nearly right angles. Scutellum triangular, depressed, and with punctures in the middle. Elytra flat, longer than the thorax, scarcely broader, punctate, impressed unequally, a little narrower behind than in front, with the shoulders rather prominent, the sides shortly declinate, margined, the apex obliquely truncate, the exterior apical angles rounded. Abdomen finely punctate.

From Port Phillip in New Holland. In the Berlin and British Museums.

## 2. STAUROGLOSSICUS LEPIDUS.

Parum elongatus, subcuneiformis, postice attenuatus, depressus, nitidus, glaber, levis-sime punctatus, læte testaceus. Long.  $1\frac{1}{2}$  lin., lat.  $\frac{3}{5}$  lin.

Habitat in insula Batchiana.

Somewhat elongate, narrowed behind so as to be somewhat cuneiform, depressed, flat above, shining, glabrous, very finely and sparsely punctate, clear testaceous. Head smooth and flat, without impressions. Antennæ dusky towards the apex. Parts of the mouth as in *S. terminalis*, but the lobes of the ligula show more clearly the relationship to the *Carpophili*, being a very little less hammer-shaped and slightly obliquely sloped inwards behind. Thorax broader than long, broadest a little before the middle; sides gradually rounded, about equally broad at the anterior and posterior angles; apex emarginate, sides of the emargination oblique, middle straight, anterior angles declinate, nearly right angles, posterior angles obtuse, base truncate straight; disk flat from the apex to the base, the sides slightly declinate; very finely punctate. Scutellum large, triangular, faintly punctate at the base, impunctate at the apex. Elytra nearly a half longer than the thorax, flat; shoulders square, rather prominent and sharp; sides subparallel, gently rounded, margined, and slightly canaliculated; disk sloping towards the suture; apex of each elytron obliquely truncate; paler than the thorax, less shining, the chitinous structure of the surface discernible with an ordinary lens. Abdomen with the segments finely punctate. Underside finely punctate. Legs moderate; tarsi moderately dilated.

This species is interesting from its locality and from its retaining so completely the minute characters of the Australian species.

Collected by Mr. Wallace in the island of Batchian, under bark and chips of freshly cut trees, and in the island of Morty, north of Gilolo.

Genus EIDOCOLASTUS (εἶδος, likeness; and *Colastus*).

Corpus planum et depressum. Caput latum. Epistoma minus porrectum. Maxillæ apice truncatæ.

Abdomen segmentis omnibus (ultimo longiore excepto) æqualibus. Cætera ut in *Carpophilo*.

Body depressed and flat, and with much of the appearance of the very flat species of *Colastus* (*C. amputatus*, &c.). Head broad, with the epistome very slightly produced. Eyes large, and occupying the whole side of the head from the antennæ back to the thorax. Maxillary lobes broad, short, and truncate at the apex; abdominal fimbriæ not visible from above, except on the penultimate segment, where they are small and curved at its anterior angles. In other respects as in *Carpophilus*.

Count de Motschulsky, who first described the two species on which I have founded this genus, referred them to *Colastus*; but they do not belong to it. That genus, which, so far as is yet known, is confined to the American continent, is one of the best-marked and most easily identified of any in this family, the peculiar lobes of the ligula and broad fimbriæ on the pygidium at once distinguishing it. The species of this genus have neither of these, but all the structural characters of *Carpophilus*, although the depressed form and broad head give them a different facies.

CARPOPHILUS.  
EIDOCOLASTUS.      HAPTONCUS.  
COLASTUS.

*Position and Affinities.*—STAUROGLOSSICUS.

1. EIDOCOLASTUS PLAGIATIPENNIS. (Plate XXXIII. fig. 6.)

Motsch. Etud. Ent. vii. 39 (1858).

Ovatus, valde depressus, subtiliter punctatus, glaber, nitidus, plus minusve nigro-fuscus; thoracis marginibus, elytrorum macula triangulari medio prope ad suturam, antennarum basi, ore, corpore subtus pedibusque testaceis; antennarum clava nigra. Long. 1 lin., lat.  $\frac{1}{2}$  lin.

Habitat in Taprobana.

Ovate, very much depressed, finely punctulate, glabrous, shining, more or less nigro-fuscous. Head finely punctate, with a narrow transverse impression on each side at the base of the epistome; antennæ with the club black and base testaceous. Thorax transverse, finely punctate, trisinate at the base, with the sides gently rounded, a little narrower in front than behind; apex emarginate and bisinate; anterior angles declinate, nearly right angles; posterior angles nearly right angles, projecting a little backwards. Scutellum broad, pentangular, the lateral angles rounded; impunctate. Elytra equal in breadth to the thorax, subquadrate, somewhat attenuate behind, sides gently rounded and margined, apex of each elytron obliquely truncate, exterior apical angles rounded, sutural angles obtuse; sparsely and finely punctate, each elytron with a triangular pale spot in the middle near the suture, the base of the triangle placed obliquely between the suture and the shoulder. Abdomen slightly pubescent.

From Ceylon. From Mr. Nietner and Count de Motschulsky.

2. EIDOCOLASTUS DILUTUS.

Motsch. Etud. Ent. vii. 39 (1858).

*C. plagiatiipenni* simillimus; parum major, thoracæ fortius punctato, elytris macula testacea magis expansa et minus distincta, antennarum clava dilutior. Long. 1 lin., lat.  $\frac{1}{2}$  lin.

Habitat in India orientali.

Exceedingly near to *C. plagiatiipennis*. A little larger; the thorax more strongly punctate; elytra with the testaceous spots larger and less distinct; antennæ with a paler club.

From the East Indies. I am indebted for specimens of these species (which I have placed in the British Museum) to the kindness of Count de Motschulsky.

Genus *HAPTONCUS* (*ἅπτω*, which touches; and *ὄγκος* (for the sake of euphony, *ὄγκος*), tumidity, referring to the large last article of the labial palpi).

Oculi modici, basin capitis attingentes. Labrum bilobum. Epistoma prominens. Paraglossæ alis membranaceis plicatis. Palpi labiales articulo ultimo magno, calyciformi. Abdomen articulis duobus expositis, sed interdum sub elytris contractis; articulo primo et ultimo majoribus; cæteris æqualibus; fimbriis haud apparentibus.

Body small, slightly convex. Head rather large; epistome projecting; eyes moderate in size, occupying the whole of the sides of the head. Antennal grooves short and converging. Antennæ with the first joint large and swollen, the second short, convex, the third to the eighth inclusive very slender, the third longer than any two of the rest, which are nearly of equal length, the seventh and eighth gradually a little wider, the ninth, tenth, and eleventh forming a large oval club, very pubescent. Labrum deeply bilobed. Mandibles strongly bidentate, the second tooth not much behind the first, ciliated on the inner side. Maxillary lobes moderate, bearded at the point and on the inner side. Maxillary palpi with the first article small, the second swollen at the apex, the third short and stout, and the last article long and cylindrical. Labial palpi with the last article large, cup-shaped, the preceding article small and likewise cup-shaped, holding the last. Ligula very small, with large, projecting, ear-shaped membranaceous paraglossæ, which appear to be composed of a double fold with ciliated margins. Mentum deeply emarginate. Thorax slightly convex, transverse, margined. Scutellum moderate. Elytra not striate; apex of each elytron obliquely truncate. Abdomen scarcely visible from above, but looked at from behind, the pygidium and penultimate segment are visible; no fimbriæ are visible, the suture of the dorsal and ventral segment being on the margin; below, the first and last segments are the longest, the rest about equal, the penultimate being slightly the longest. Prosternum projecting, but not prominent, resting on the metasternum. Metathorax without axillary pieces. Posterior coxæ placed most apart. Legs robust; thighs with a groove to receive the tibiæ. Tarsi slender, not dilated.

This genus forms a transition between *Carpophilus* and *Epurea*, and it is doubtful whether it properly belongs to the *Carpophilidæ* or to the *Nitidulinæ*. The former has at least two segments of the abdomen exposed, the latter only one. In this genus the dorsal segments of the abdomen are often so curved-in that they are not visible; but when looked at from behind, the last two are seen. I have therefore placed it near the end of this group.

#### STAUROGLOSSICUS.

*Position and Affinities.*—EIDOCOLASTUS. HAPTONCUS. EPUREA.  
CARPOPHILUS.

#### 1. *HAPTONCUS TETRAGONUS* (Dohrn). (Plate XXXIII. fig. 7.)

Parvus, oblongo-ovatus, subdepressus, levissime punctatus et pubescens, testaceus, elytris nigro maculatis; thorace latiore prope medium. Long.  $\frac{3}{4}$ –1 lin., lat.  $\frac{1}{2}$  lin.

Habitat in Taprobana.

Small, oblong-ovate, subdepressed or only very slightly convex, very faintly punctate,

finely pubescent, testaceous. Head bi-impressed in front; club of antennæ a little darker than the other joints. Thorax transverse, nearly twice as broad as long, a little narrower in front, apex emarginate and bisinuate, sides gently rounded, margins reflexed, most so towards the posterior angles; anterior angles rounded, posterior angles slightly obtuse and a little raised above the elytra. Scutellum triangular, faintly and sparingly punctate and pubescent. Elytra not wider than the thorax at the base, widest a little before the middle, and immediately behind the widest part sloping somewhat acutely obliquely towards the apex, which is considerably narrower than the base; margined; apex of each elytron obliquely rounded, apical sutural angles as well as exterior angles rounded, finely pubescent and punctate, with the apex black, and with an irregular, somewhat zigzag black fascia near the middle, reaching neither to the sides nor the suture, projecting backwards near the sides, then forwards and again backwards; there is also in some specimens a triangular patch pointing backwards within the shoulder. Abdomen pubescent and very finely punctate.

From Ceylon, where it was collected by Mr. Nietner and Count de Motschulsky. Mr. Wallace also found specimens in the island of Macassar.

## 2. HAPTONCUS CONCOLOR.

*H. tetragono* affinis; parvus, oblongo-ovatus, subdepressus, levissime punctatus, levissime pallide pubescens, totus pallide testaceus; thorace marginato et reflexo, prope angulos posticos latiore; elytris postice haud multo attenuatis, apice latis recte truncatis. Long.  $\frac{3}{4}$  lin., lat.  $\frac{1}{3}$  lin.

Habitat in insula Dorey.

Allied to *H. tetragonus*. Small, oblong-ovate, subdepressed or only very slightly convex, very faintly punctate, and with a very slight pale pubescence, entirely pale testaceous. Head even. Thorax considerably narrower in front than behind, widest just before the posterior angles, rounded rapidly to them, and sloping gently to the front; the apex is deeply emarginate and bisinuate; the sides margined and reflexed, more widely in front than in the middle, and most so at the posterior angles, which are obtuse and project slightly backwards at the point; the anterior angles are rounded; base truncate straight, except when it reaches the posterior angles, where it forms a sort of projecting tooth. Scutellum transverse, triangular. Elytra somewhat convex, not much expanded at the sides, gently rounded; apex not much narrower than the base, truncate straight, with the exterior apical angles rounded and the sutural apical angles nearly right angles.

From the island of Dorey, New Guinea. Collected by Mr. Wallace. There is an example which has the elytra more expanded, as in *H. tetragonus*, and the disk more convex, with a large and deep depression on each side of the suture near the scutellum. It is doubtless merely an immature specimen. There is another individual, from Macassar, also collected by Mr. Wallace, which has the posterior angles of the thorax not so projecting as in the specimens from Dorey.

## 3. HAPTONCUS OVALIS.

*H. concolori* affinis; parvus, late ovalis, parum convexus et subnitidus, sparsim leviter punctatus, vix pubescens, læte testaceus; antennis pallidis, articulis ultimis duobus nigris; thorace anguste marginato, angulis posticis latiore. Long.  $\frac{1}{2}$  lin., lat.  $\frac{1}{3}$  lin.

Habitat in Nova Guinea.

Allied to *H. concolor*. Small, broadly oval, slightly convex, somewhat shining, sparsely and faintly punctate, scarcely pubescent, clear testaceous; the antennæ pale luteous, with the last two articles of the club black or blackish. Thorax considerably narrower in front than behind, sloping in a gradual and gentle round from the posterior angles to the front; apex emarginate, very narrowly margined instead of having the margin reflexed as in *H. concolor*; anterior angles much declinate, obtuse; posterior angles slightly obtuse, almost right angles; base bisinuate. Scutellum rather large, triangular. Elytra widest before the middle, attenuated behind it, apex truncate; exterior apical angles rounded, sutural apical angles nearly right angles.

From Macassar. Collected by Mr. Wallace. A single specimen in the British Museum.

## 4. HAPTONCUS PUBESCENS.

*Epurea lutea* similis; parallelus, levissime punctatus, testaceo pubescens, totus testaceus; thorace antice quam postice haud multo angustiore, angulis anticis obtusis; elytris haud medio expansis, apice latis. Long.  $\frac{3}{4}$ –1 lin., lat.  $\frac{1}{2}$  lin.

Habitat in Taprobana.

Similar in appearance to *Epurea lutea*. Wholly testaceous, oblong, parallel, clothed with long soft testaceous pubescence, very finely punctate. Thorax with the sides only slightly rounded, not much narrower in front than behind; apex emarginate and bluntly bisinuate; anterior angles somewhat obtuse; sides very slightly sinuate at the posterior angles, which are somewhat obtuse; base slightly bisinuate. Elytra with the sides very little rounded, apex nearly as broad as the base, straight truncate; exterior apical angles rounded, sutural apical angles nearly right angles. Pygidium pointed.

From Ceylon, where it does not appear to be rare.

## 5. HAPTONCUS TESTACEUS.

*H. pubescenti* affinis; major, minus pubescens, thorace antice quam postice parum angustiore, angulis anticis rotundatis; rufo-testaceus. Long. 1 lin., lat.  $\frac{1}{2}$ – $\frac{3}{5}$  lin.

Habitat in insula Macassar.

Allied to *H. pubescens*; of the same general form, but larger, less pubescent, more shining, and somewhat more rufous in colour; antennæ dark rufous; the thorax somewhat narrower in front, and the anterior angles rounded instead of obtuse. In other respects it is very similar to *H. pubescens*.

I am not sure, however, that it belongs to this genus. The parts of the mouth, with the exception of the ligula, are nearly the same, but the ligula is different. The folded double membranous lobes are absent; or, if they exist, they are concealed by the large cup-formed terminal article of the labial palpi.

From the island of Macassar. Collected by Mr. Wallace.

Genus TETRISUS (τέτρα, four; ἴσος, equal,—in allusion to the first four segments of the abdomen being equal, or nearly so).

Abdomen segmentis duobus ultimis solum expositis; penultimo fimbriis parvis sed distinctis instructo; segmentis primis quatuor longitudine æqualibus. Ligula minuta, alis membranaceis projectis vel fasciculo crinium instructis. Cætera fere ut in *Carpophilo*.

Body rather depressed, wedge-shaped. Texture fine. Labrum bilobed. Mandibles short, bidentate; inner side slightly bearded. Antennæ with the first article large and dilated; second smaller, but still dilated and unequal; third elongate and slender; fourth, fifth, and sixth very small; seventh and eighth slightly increasing in size; ninth, tenth, and eleventh forming a rounded club. Maxillæ not broad, bearded at the end and on the inner side. Maxillary palpi short; first article minute, second short and small, not much dilated, third a little larger, and fourth cylindrico-conical, nearly as long as the two preceding articles together. Labial palpi with the first article minute, the second slender, and the third broad, large, and truncate. The ligula minute, and the paraglossæ in one species seem to be little more than a few hairs\*; in the other species they are rather prominent and somewhat subtriangular. The fimbriæ on the penultimate segment are distinct. Metathorax without axillary pieces. In other respects almost as in *Carpophilus*.

*Position and Affinities.*—CARPOPHILUS. TETRISUS. TRIMENUS.

# 1. TETRISUS CHOLEVOIDES. (Plate XXXIII. fig. 2.)

Oblongo-ovatus, postice attenuatus, subdepressus, subopacus, textura *Cholevæ*, subtilissime creberrime punctatus et cinereo pubescens; nigro-piceus, thoracis margine rufescente, ore, antennis pedibusque rufo-piceis; elytris thorace duplo longioribus. Long.  $1\frac{1}{3}$  lin., lat.  $\frac{2}{3}$  lin.

Habitat in Borneo.

Oblong-ovate, broadest in front, attenuated behind, subdepressed, subopaque, of the texture of the *Cholevæ* (*Catops velox* for example), very finely and thickly punctate, and closely, shortly, and finely cinereo-pubescent, nigro-piceous or black. Labrum with the lobes conical. Head very thickly and finely punctate; mouth and antennæ rufo-piceous. Thorax transverse, sides rounded and deeply margined, anterior angles rounded, posterior angles obtuse; apex emarginate, base slightly bisinuate; disk smooth, equal, and gently rounded; apex and sides slightly rufescent and translucent. Scutellum triangular, apex somewhat rounded. Elytra twice as long as the thorax, attenuated behind, slightly widened and more convex behind the middle, sides deeply margined and canaliculated; apex truncate obliquely, exterior apical angles rounded, sutural angles rectangular. Abdomen punctate and pubescent, narrow behind. Underside piceo-rufescent. Legs rufo-piceous.

From Borneo. Very rare. I have only seen two specimens, both collected by Mr. Wallace. In the British Museum.

\* I do not speak with confidence of all the parts of the mouth in this species. I have had only a single specimen to examine, and, as sometimes happens, the extreme care which I took to avoid injuring it produced the opposite result, and the ligula and maxillæ were damaged in the dissection. A more successful dissection may perhaps show it to be the same as in the next species. But, throughout this monograph, I have figured everything exactly as I saw it, not venturing to alter anything to suit my own conceptions.

2. *TETRISUS HYDROPOROIDES*. (Plate XXXV. fig. 10.)

Depressus, oblongo-fusiformis, opacus, levissime aciculatim punctatus, breviter griseo pubescens, testaceo-ferrugineus; thorace medio longitudinaliter, scutello, elytris lateribus apice et interdum sutura versus basin fuscis vel nigro-fuscis. Long.  $1\frac{1}{2}$ – $1\frac{3}{4}$  lin., lat. 1 lin.

Habitat in Borneo.

Depressed, oblong-fusiform, opaque, very finely aciculary punctate, with very short and fine griseous pubescence, testaceo-ferruginous. In appearance, form, and colouring bearing a certain resemblance to some of the *Hydropori* (as *H. 12-pustulatus* for example). Head with a large rounded fovea on each side of the epistome, which makes the middle appear raised. Labrum deeply bilobed, the lobes rounded instead of being conically shaped as in *T. Cholevoides*. Mandibles with the double tooth at the apex somewhat larger than in *T. Cholevoides*. Maxillæ and maxillary palpi as in that species. The membranous wing of the ligula sufficiently large and distinct, something of the same shape as the bunch of hairs which appears to be its substitute in *T. Cholevoides*. The labial palpi of the same shape and proportions as in it, but larger. Antennæ as in it. Thorax transverse, very smooth, equally and gently convex, narrower in front than behind, widest about one-fourth of its length before the posterior angles; apex emarginate, emargination rounded; sides gently and regularly curved and slightly margined; anterior angles obtuse, almost rounded; posterior angles obtuse and looking slightly backwards; base strongly bisinuate; disk fuscous. Scutellum rather broad, triangular, margin smooth, rest finely aciculary punctate, fuscous. Elytra depressed, rounded from the base, widest about the middle, attenuated behind, sides margined; exterior angles at the base obtuse, pointed; exterior apical angles rounded, sutural apical angles obtuse; apex of each elytron very obliquely truncate; the disk ferrugineo-testaceous, with the apex and sides dark fuscous, and the basal fuscous part twice as broad as the part between it and the apical fuscous band; the suture at the base sometimes fuscous. Abdomen usually wholly ferrugineo-testaceous, in some individuals a little darker towards the margins of the segments. Underside testaceous, palest in the middle. Legs ferrugineo-testaceous.

This species certainly belongs to the same genus as *T. Cholevoides*, although it is so much larger and differs in the membranous wings of the ligula. The general facies is similar, and its other characters nearly identical. It forms the passage between *T. Cholevoides* and the genus *Trimenus*.

From Borneo. Collected by Mr. Wallace.

Genus *TRIMENUS* (Motsch.).

Corpus latum et depressum. Oculi sat magni, basin capitis attingentes. Sulci antennarii breves, convergentes. Labrum bifidum. Epistoma porrectum. Elytra longa, lata, haud striata. Abdomen duobus segmentis supra expositis, pygidio majore; segmentis omnibus (pygidio excepto) fere æqualibus; fimbriis parvis.

Body broad, flat, and depressed. Eyes large and coarsely granulated, reaching to the

base of the head. Epistome projecting. Labrum deeply bifid. Antennal grooves short, converging. Antennæ rather long and slender, except the club: first article dilated on the outer side; second stout, rather long; third not so stout, but nearly twice as long as the second, subcylindrical; fourth and fifth equal, each a little shorter than the third; sixth, seventh, and eighth submoniliform, short, slightly and gradually increasing a little in width; ninth, tenth, and eleventh forming a large, oval, flat club. Mandibles bidentate; the apical tooth chisel-shaped, inner side bearded behind the second tooth. Maxillæ short, bearded on the inner side (Pl. XXXVI. fig. 4*f*). Maxillary palpi cylindrical, with the first article small, second large, third shorter, fourth longest and cylindrical. Labial palpi with the first article very small, second a little larger, unequal, third broad and securiform. Ligula small, short, somewhat conical, with large, spherically triangular, membranous united lobes or wings projecting from the anterior angles (Pl. XXXVI. fig. 4*e*). Mentum biemarginate, with a broad projecting tooth in the middle. Thorax flat and transverse, margined. Scutellum moderate, subtriangular. Elytra broad, flat, narrowed and rounded-in towards the apex, margined. Abdomen above with only the pygidium and a portion of the penultimate segment exposed; below with all the segments about equal in length, the last segment a little the longest, and the first next longest; the fimbriæ small, but distinct; pygidium pointed. Prosternum flat, widened behind, resting on the mesosternum. Metathorax without axillary pieces. Legs stout; thighs canaliculated to receive the tibiæ; middle tibiæ bent and excised near the apex on the inner side in the males. Tarsi moderate.

	ECNOMÆUS.	
<i>Position and Affinities.</i> —TETRISUS.	TRIMENUS.	EPUREA.
	SOMAPHORUS.	

1. TRIMENUS ADPRESSUS. (Plate XXXVI. fig. 4.)

Subovatus, antice parum lator, sat latus, valde depressus, crebre leviter punctatus, breviter sat dense testaceo pubescens, rubro-ferrugineus. Long.  $2-2\frac{1}{4}$  lin., lat.  $1-1\frac{1}{4}$  lin.

Habitat in Borneo, Aru, &c.

Rather broad, subovate, somewhat narrowed behind, very much depressed; very thickly punctured so as to seem finely shagreened, clothed with a rather close, short testaceous pubescence; ferruginous red. Head with a shallow impression on each side in front behind the base of the antennæ. Thorax once and a half as broad as long, narrower in front than behind; sides very narrowly margined, posteriorly somewhat parallel; rounded-in towards the apex, which is emarginate; anterior angles obtuse, posterior angles right angles; base truncate, slightly bisinuate. Scutellum moderate in size, triangular. Elytra about twice the length of the thorax, with their base equal in breadth to the base of the thorax; sides parallel for two-thirds of their length from the base, then rather rounded-in to the apex, which is attenuated, flat, and truncate nearly straight; the sides are broadly margined and canaliculated, the margin slightly extending round the shoulder and not reaching to the apex; underside of margin broad; the exterior basal angles somewhat obtuse, the exterior apical angles rounded, the sutural apical

angles slightly obtuse. The disk, both of thorax and elytra, is even and regular, without depressions. Abdomen finely punctate.

Mr. Wallace collected a considerable number of specimens of this species in the various islands of the Bornean Archipelago, &c., and those from different islands have a slight difference in their relative size, breadth, &c.; but I can find no distinctions sufficient to constitute a species, except perhaps in one (the following), which is narrower and less attenuated behind.

From Borneo, Aru, Dorey, Morty, Waigiou, Amboyna, Macassar, &c.

## 2. TRIMENUS ANGUSTATUS.

*T. adpresso* valde affinis; minor, angustior, thorace brevior, et elytris subparallelis; cæteris ut in *T. adpresso*. Long.  $1\frac{3}{4}$  lin., lat.  $\frac{3}{5}$  lin.

Habitat in insula Macassar et insula Morty.

Very closely allied to *T. adpressus*. Smaller, narrower, more parallel; the elytra not so much attenuated towards the apex as in that species, but parallel until they almost reach it; thorax comparatively shorter and broader, slightly narrowed towards the posterior angles.

The gradation between the broadest specimens (widest in front and most attenuated behind) and the present species or variety is so gradual, that I have great hesitation in proposing this as a distinct species. There is a slight gap, however, between it and the rest, and I have availed myself of it.

From Macassar and the island of Morty.

Genus SOMAPHORUS (σῶμα, a body; and φορὸς, bearer,—in allusion to the large size of the elytra as compared with that of the head and thorax).

Corpus latum et depressum. Oculi sat magni, basin capitis attingentes. Sulci antennarii breves, convergentes. Labrum bifidum, in fronte capitis receptum. Sine epistomate. Elytra longa, lata, haud striata. Abdomen segmentis duobus ultimis expositis, segmentis omnibus (primo excepto) fere æqualibus; sine fimbriis.

Body broad, flat, and depressed. Head broad. Eyes rather large, reaching to the base of the head. Epistome absent. Labrum with a notch excised in the middle, and received into a rounded emargination in the anterior margin of the head (Pl. XXXVI. fig. 7 *h*). Antennal grooves short and converging. Antennæ rather long; first article dilated, second stout, third longer, fourth to eighth short and gradually increasing in breadth, ninth to eleventh forming a large, flattened, truncate club. Mandibles strongly bidentate, inner side bearded behind the second tooth. Maxillæ narrow, rather long, bearded with long hairs at the end and with shorter on the inner side (Pl. XXXVI. fig. 7 *f*). Maxillary palpi rather slender and small; first article small, second the largest and dilated on the outer side, third smaller, and last conical. Labial palpi minute and of nearly equal breadth; first article small, second narrow and longer, third of about the same length as the second, but a little thicker, ovate, and truncate. Ligula rounded, with large rounded membranous lobes or wings nearly straight in front and apparently

united, probably as in *Trimenus* (Pl. XXXVI. fig. 7 *e*). Mentum narrowly and straightly emarginate, without any tooth in the middle. Thorax flat, transverse, and margined. Scutellum rather large, rounded. Elytra broad, flat, parallel, margined; each elytron rounded at the apex. Abdomen above with only the pygidium and a small portion of the penultimate segment visible; below with all the segments nearly equal, except the first; pygidium short, broad, and truncate, not pointed. Legs stout; all the tibiæ straight; tarsi rather large.

*Position and Affinities.*—TRIMENUS. SOMAPHORUS. EPUREA.

SOMAPHORUS FERRUGINEUS. (Plate XXXVI. fig. 7.)

Latus, oblongus, planus, depressus, parallelus, crebre punctatus, dense testaceo pubescens, læte ferrugineo-testaceus, lateribus ciliatis, pygidio barbato. Long.  $2\frac{1}{4}$  lin., lat.  $1\frac{1}{4}$  lin.

Habitat in insulis Philippinis?

Oblong, broad, flat, depressed, parallel, thickly punctate, clothed with long testaceous pubescence, bright ferrugineo-testaceous. Labrum with a marginal line. Head finely punctate. Thorax transverse, twice as broad as long, narrower in front than behind; thickly and strongly punctate, with the disk slightly raised and the sides flat on each side, the flattened portion widest behind, the sides somewhat parallel at the base and rounded in front, widely margined, and ciliated with long hairs; apex widely and deeply emarginate; anterior angles obtusely rounded; posterior angles acute angles, not sharp at the point; base deeply bisinuate. Scutellum punctate. Elytra long, of the breadth of the base of the thorax, twice and a half the length of the thorax, parallel from the base almost to the apex, sides margined, apex of each elytron regularly and equally rounded; much punctate and with long pubescence; exterior apical angles rounded, sutural apical angles obtuse. Apex of abdomen with long tufts of hairs on each side. Tibiæ slightly serrated, and fringed with hairs.

From the Philippine Islands? Communicated to me by Professor Westwood from the Oxford Museum.

#### Genus ECNOMÆUS.

Erchs. in Germ. Zeitschr. iv. 264 (1843).

Lacord. Hist. des Ins. Coléopt. ii. 299 (1854).

Labrum emarginatum. Elytra apice rotundata, abdominis segmenta tria prima obtegentia. Abdomen segmentis duobus primis brevissimis, reliquis mediocribus; fimbriis sat latis. Pedes compressi; tarsis simplicibus.

Body oblong-oval, flat or concave above. Head elongate, without antennal grooves. Epistome dilated before the eyes. Antennæ inserted under the sides of the epistome; short and slender; first article cylindrical, longer and thicker than the rest; second and third of the same form, more slender, rather long, and subequal; fourth to eighth short; ninth to eleventh forming a small elongated club. Labrum large, feebly emarginate. Mandibles much arched, bordered on the outer side, terminating in a long and sharp

point preceded by a strong tooth. Maxillary lobes broad, bearded at the extremity and on the inner side. Maxillary palpi filiform, with the last article subcylindric. Labial palpi of the same form, but not so slender. Ligula corneous, furnished with two very broad and projecting membranous lobes. Mentum short, broadly emarginate in front. Thorax short, somewhat emarginate in front, truncate straight behind, depressed or hollowed, margined and ciliated on the sides. Scutellum triangular. Elytra flat or concave, margined and ciliated on the sides, apex truncate. Abdomen with two segments exposed, the first two very short, the others moderate, equal; its sides ciliated. Fimbriæ distinct and rather broad. Prosternal projection broadly truncated behind. Legs robust, compressed; tibiæ straight, ciliated on the outside, their terminal spurs rather long; tarsi slender, simple, the first article a little longer than the others; claws simple.

This genus forms an exception to the characters founded on the breadth of the fimbriæ; it has them as broad as in the *Brachypepli*. Their presence here explains the conditions under which they are developed. Their occurrence appears to depend upon the flatness of the abdomen. Where the edge is sharp, the margins of the underside of the abdomen lap over and form the fimbria; where the edge is convex or rounded, they do not. It is as if a seam at the very edge would leave the suture too open. *Ecnomæus*, although belonging to the section with a less depressed body and abdomen, has the upper side as flat and depressed as any of the *Late-fimbriatæ*, and the margins of the abdomen as sharp; hence the fimbriæ overlap. The convexity, however, remains on the underside (see Pl. XXXV. fig. 9 d). It, as well as *Somaphorus*, intercalates badly here. The smoothest transition between *Carpophilus* and *Epurea* is, so far as regards the smaller *Epureæ*, by *Eidocolastus* and *Haptoneus*, and as regards the larger ones, by *Trimenus*, and the occurrence of *Somaphorus* and *Ecnomæus* interrupts the stream of affinity awkwardly. They compose a parallel or cross group, a proper place for which is difficult to find.

	EPUREA.	
<i>Position and Affinities.</i> —SOMAPHORUS.	ECNOMÆUS.	NITIDULA.
	MYSTROPS.	

# 1. ECNOMÆUS PLANUS. (Plate XXXV. fig. 9.)

Erichs. in Germ. Zeitschr. iv. 264 (1843).

*Ips planipennis*, Dej. Cat. p. 134. (1837).

Cinnamomeus, opacus, testaceo pubescens, subtiliter punctatus. Long.  $3\frac{1}{4}$  lin., lat.  $1\frac{1}{2}$  lin.

Habitat in Senegallia.

Large, depressed, even somewhat concave above, oblong-ovate. Body pale, finely punctate, testaceo-pubescent, cinnamon-coloured and opaque above, rufo-testaceous and somewhat shining below. Thorax twice as broad as long, somewhat narrowed in front, a little rounded on the sides, longitudinally hollowed out; base truncate in the middle, sinuate on each side; anterior angles obtuse, posterior angles nearly right angles. Scutellum triangular. Elytra nearly flat, somewhat depressed towards the suture, and

sloping posteriorly to the exterior apical angles; apex truncate, but with both the exterior and sutural angles rounded, the former broadly rounded.

From Senegal. I have only seen one specimen in the Berlin Museum, and one in Dejean's collection in the possession of the Marquis de la Ferté.

## 2. *ECNOMÆUS CONCAVUS*.

Erichs. in Germ. Zeitschr. v. 438 (1844).

Testaceus, nitidus, subtiliter pubescens, thoracis concavi elytrorumque margine elevato.

Long.  $3\frac{1}{2}$  lin.

Habitat in "Christmas Bay."

Testaceous, shining, finely pubescent; the thorax concave, with its margin raised; the elytra also with a raised margin.

Distinguished from *E. planus* by its lighter colour, by its shining through the pubescence, which is finer and somewhat longer on the upper side, by its breadth behind the wide concave thorax, and by the strongly raised margins of the thorax and elytra, as well as by the longer elytra. Below, the abdomen has a longer pubescence at the apex on each side.

From Christmas Bay. In the Berlin Museum.

## 3. *ECNOMÆUS SCAPHULA*.

Erichs. in Germ. Zeitschr. v. 438 (1844).

Testaceus, subnitidus, subtiliter pubescens; thorace brevissimo, coleopterisque leviter concavis, his margine laterali elevato. Long. 2 lin.

Habitat in Nubia.

Testaceous, somewhat shining, finely pubescent, with the thorax very short, the elytra slightly concave and with the lateral margin raised.

Nearly allied to *E. concavus* (perhaps merely a variety), but only half its size. The thorax is proportionally broader and shorter and the elytra less shining.

From Nubia. There is a unique specimen in the Berlin Museum.

## Genus *MYSTROPS*.

Erichs. in Germ. Zeitschr. iv. 234 (1843).

Lacordaire, Hist. Ins. Col. ii. 294 (1837).

*Othonea* (Dej. in litt.).

Caput sine sulcis antennariis. Labrum bilobum. Abdomen segmentis subæqualibus, segmentulo anali in utrovis sexu nullo, segmentis duobus ultimis expositis. Antennæ in maribus plerumque longiores.

Head without antennal grooves. Antennæ of different proportions in different species, and in most species of different length in the sexes, longest in the males; the club is oval or rounded and compressed. Labrum rather large, bilobed. Mandibles projecting, stout, flat, rounded on the outside, simple and sharp at the tip. Lobes of the maxillæ

elongate, strongly ciliated on the inner side. Maxillary palpi with the first article small, the second bent to the side and conical, the third cylindrical, about the length of the second, the fourth elongate, as long as all the rest together. Mentum slightly bisinuate in front. Labial palpi with the first article very short, the second and third equally long, the third elongate-oval. Ligula corneous, each anterior angle produced into a very slender, long coriaceous point, ciliated on the inner side. Thorax as broad as the elytra at its base, which is bisinuated, with its angles slightly produced behind. Elytra truncate, leaving the last two segments exposed. Prosternum articulated behind with the metasternum. Metathorax without axillary pieces. Abdomen short, the first and fifth segments a little larger than the rest; fimbriæ absent; the pygidium and part of the penultimate segment alone exposed. Legs moderate; thighs robust; tibiæ rather widened at the apex, their terminal spurs very small. The first three articles of the tarsi dilated, hairy beneath. Claws stout, simple.

The males are distinguished from the females by their head and their antennæ being longer and by the clypeus or epistome being impressed.

This genus is composed of small insects which have considerable resemblance to some of the *Brachypteridæ* and also to some of the species of *Epurea*. It has also relations with *Pria* through its elongated antennæ in the males and the prosternum resting on the metasternum.

As already mentioned (at the commencement of the *Carpophilidæ*), I have had great doubt where to place this genus. It has much affinity with the *Brachypteridæ*, of which the species *M. adustus* is perhaps the strongest example. It is not less closely allied to *Epurea*, as is well shown in *M. debilis* and *M. flavicans*. When I was at the commencement of the *Carpophili*, it puzzled me with its contradictory affinities; and difficulties near at hand always appearing larger than those far off, I wished it away from *Colastus*, and resolved to place it between *Carpophilus* and *Epurea*. Now that I have come to that place, I wish it away back again near the *Brachypteridæ*. I believe, were I to do it over again, I should now make a separate group (*Mytropsidæ*) for its reception, between the *Brachypteridæ* and the *Carpophilidæ*.

## CARPOPHILUS.

*Position and Affinities.*—BRACHYPTERUS. MYSTROPS. EPUREA.  
PRIA.

## 1. MYSTROPS DURUS.

Erichs. in Germ. Zeitschr. iv. 235 (1843).

*Othonea longicornis* (Dej. in litt.).

Convexus, niger, antennis (clava excepta) et pedibus testaceis; maribus thoracis lateribus rufescentibus, fœminis concoloribus; elytris apice singulis rotundatis. Long.  $1\frac{2}{3}$  lin.

Habitat in Brasilia.

Short, convex, black, somewhat shining, closely punctate. Head, thorax, and abdomen griseo-pubescent. Scutellum and elytra blackish pubescent. Antennæ slender, in the male nearly as long as the body (Pl. XXXII. fig. 3 a\*\*); the first article stout and

elongate; the second, third, and fourth longer, and nearly equal to each other in length; the fifth a little longer; the sixth, seventh, and eighth shorter, and decreasing by degrees; the club oblong, subcompressed, the base testaceous, the apex black: in the female reaching to the base of the thorax; the first article long; the second, third, fourth, and fifth about equal, oblong; the sixth, seventh, and eighth subglobose; club as in the male. Head with the mouth and sides rufescent. Thorax narrowed in front, the sides sometimes rufescent, sometimes concolorous. Elytra rather short, with the apex of each rounded both in male and female. Abdomen punctulate. Legs testaceous.

The males have the thorax with the sides testaceous and the disk piceous. The females are entirely black. The colour generally also is darker in the female, the dark colour in the male being piceous or piceous black, and that of the female black or nearly so. The female has the apex of the elytra rounded like the male, and not peaked as in *M. discoideus*.

From Brazil.

## 2. MYSTROPS DISCOIDEUS. (Plate XXXII. fig. 5.)

♂ *M. flexuosus* (Motsch.).

♀ *M. angulipennis* (Motsch.).

Statura *M. duri*, sed minus fortiter punctatus, minus convexus, antennis aliter compositis elytrisque longioribus; testaceus, thoracis disco longitudinaliter piceo; scutello testaceo; elytris fascia basali irregulari plus minusve lata picea. Long.  $1\frac{1}{2}$ – $1\frac{2}{3}$  lin., lat.  $\frac{3}{4}$  lin.

*Æm.* Antennis brevioribus ut in *M. duro*, elytris apice acuminatis.

Habitat prope flumina Amazonum.

Very like *M. durus*, but not so convex nor so deeply punctate; the elytra longer in both sexes, and pointed in the female. The antennæ have the club composed apparently of only two articles, and the sixth, seventh, eighth, and ninth are not shorter than those preceding as in *M. durus*. The colour is usually testaceous, with the disk piceous; but it varies considerably, chiefly in the extent occupied by the piceous portion: sometimes it is nearly of the colour of the males of *M. durus*, the elytra being almost entirely piceous; but I have never seen them wholly so, the apex being always more or less testaceous. Nor have I seen the scutellum piceous: it seems to be always testaceous in this species; in *M. durus* piceous. I have a specimen entirely rufous.

From the banks of the Amazons. It appears to be not very rare about Ega, where Mr. Bates procured a good many specimens.

In the collection of the Marquis de la Ferté-Sénectère there are three individuals ticketed as having come from Caffraria, and named (with a query) *Othonea longicornis*, Dej. I can detect no difference between them and Mr. Bates's specimens from Ega; and if the locality be correct, the species must be found both in Caffraria and South America. I think it more likely, however, that an error has been made in the locality, the rather so that I observe that the specimens are marked as having been procured from a dealer who is not always correct in his localities.

## 3. MYSTROPS DEBILIS.

Erichs. in Germ. Zeitschr. iv. 235 (1843).

Subdepressus, pallide testaceus, thoracis disco piceo, subtiliter pubescens; antennis æqualibus in utroque sexu, capitis thoracisque longitudine. Long.  $1\frac{1}{2}$  lin.

Habitat in Brasilia.

About the size and appearance of *Cercus pedicularius*; oblong, pale testaceous, closely punctate, and finely griseo-pubescent. Antennæ equal in both sexes, about the length of the head and thorax; the first article not very long, rather stout; second, third, and fourth somewhat longer; fifth, sixth, seventh, and eighth rather shorter; the ninth elongate, and the club composed apparently of only two articles. Head impressed on each side in front with a small pit. Thorax transverse, slightly narrower in front; base bisinuate; anterior angles obtusely rounded; posterior angles somewhat projecting backwards; the disk longitudinally piceous. Scutellum moderate. Elytra long and subparallel, once and a half the length of the thorax, sides declinate, rounded, margined; apex truncate; exterior apical angles broadly rounded; sutural apical angles subrectangular, rounded at the point.

From Brazil. In the Berlin and the British Museums.

## 4. MYSTROPS FLAVICANS. (Plate XXXII. fig. 3.)

*Cercus flavicans* (Dej. Cat. 137, 1843).

Affinis *M. debili*, sed duplo minor, textura molli et delicata: testaceus, levissime pubescens, oblongus, subdepressus; antennis longitudine fere dimidii corporis, tenuibus, articulis ut in *M. discoideo*, sed clava minore et brevior; elytris apice truncato, angulis exterioribus rotundatis, sutura utrinque sublineata. Long.  $\frac{3}{4}$ –1 lin., lat.  $\frac{1}{3}$  lin.

Habitat in Brasilia.

Allied to *M. debilis*, but only half the size, of a soft and delicate texture. Testaceous, very slightly pubescent, oblong, subdepressed. Head with a deep transverse and oblique impression on each side in front. The antennæ about half the length of the body, slender, with the articles as in *M. discoideus*, but with a smaller and shorter club (Pl. XXXII. fig. 3 a). Thorax not much narrower in front than behind, impressed on each side in the middle, with the anterior angles inflexed and rounded, the posterior almost flat and right angles, truncate at the base. Scutellum triangular. Elytra subparallel, with the sides inflexed and rounded, a faint line impressed on each side of the suture, the apex truncate and its outer angles rounded.

Found in Brazil. In the British Museum.

## 5. MYSTROPS DISPAR (Klug).

Erichs. in Germ. Zeitschr. iv. 235 (1843).

Breviter oblongus, levissime punctatus et breviter pubescens, testaceus, thoracis disco, elytrorum regionē scutellari, lateribus et apice pallide piceis; antennis maribus corpore duplo longioribus, articulo secundo brevi; thorace sat convexo, transverso,

antice angustiore; scutello piceo; elytris subquadratis, lateribus marginatis, apice rotundato. Long.  $1\frac{1}{4}$  lin., lat.  $\frac{1}{2}$ – $\frac{3}{5}$  lin.

Habitat in Madagascaria.

Rather broad, shortly oblong, very faintly punctate, and clothed with a short pubescence; testaceous, with the disk of the thorax, the scutellar region, and sides and apex of the elytra pale piceous. Mandibles broad, projecting, canaliculate, acute; the head raised at the base of the antennæ. Antennæ twice the length of the body in the males. Thorax rather convex, transverse, broader than long, narrowed in front, with the sides rounded, the base truncate and sinuate, the anterior angles obtuse, and the posterior obtusely rectangular. Scutellum moderate, piceous. Elytra subquadrate, the sides margined, the apex rounded. The pygidium alone appears exposed.

I have only seen specimens of the male.

From Madagascar. In the Berlin Museum and in the collections of the Marquis de la Ferté and of M. Deyrolle.

#### 6. MYSTROPS ADUSTUS (Motsch.).

Oblongus, nitidus, glaber, leviter punctatus, nigro-piceus, elytrorum disco rufo-piceo, mandibulis testaceis, valde explanatis; antennis longitudine dimidii corporis, fuscis, basi testaceis; thorace subconvexo, transverso; elytris apice rotundatim truncato, sutura utrinque linea subimpressa; subtus et pedibus piceis.

*Fcem.* Antennis brevioribus, thorace vix longioribus. Long. 1 lin., lat.  $\frac{1}{2}$  lin.

Habitat in Columbia.

Very like a *Brachypterus*. Smooth, glabrous, shining, oblong, faintly punctate, piceous black, with the disk of the elytra rufo-piceous. Head very much hollowed out in front in the middle and on each side at the base of the antennæ. Epistome quadrangular and impunctate, but impressed on each side. Mandibles testaceous and much flattened. Antennæ about half the length of the body, with the articles gradually slightly increasing in size from the third to the termination; the first article stout; the second, third, fourth, fifth, and sixth long and equal; the seventh and eighth shorter; the ninth, tenth, and eleventh a little thickened, forming a long and slender club; the eleventh minute; the last six articles (sixth to eleventh) fuscous, the remainder testaceous. In the female the antennæ are shorter, being scarcely longer than the thorax. Thorax transverse, subconvex, shorter than long, rather narrower in front than behind, expanded backwards near the posterior angles, embracing the shoulders of the elytra as it were; anterior angles obtuse; the sides angled behind the middle. Scutellum rather large. Elytra oblong, rufo-piceous, each with the disk surrounded by blackish piceous; the sides somewhat rounded and inflexed; a faint line impressed on each side of the suture, which is blackish piceous; the apex truncate and rounded. The pygidium and penultimate segment of the abdomen are subpubescent, the latter scarcely visible from above, the abdomen being bent in. The underside and the legs piceous.

From Columbia. In the British Museum.



## EXPLANATION OF PLATE XXXII.

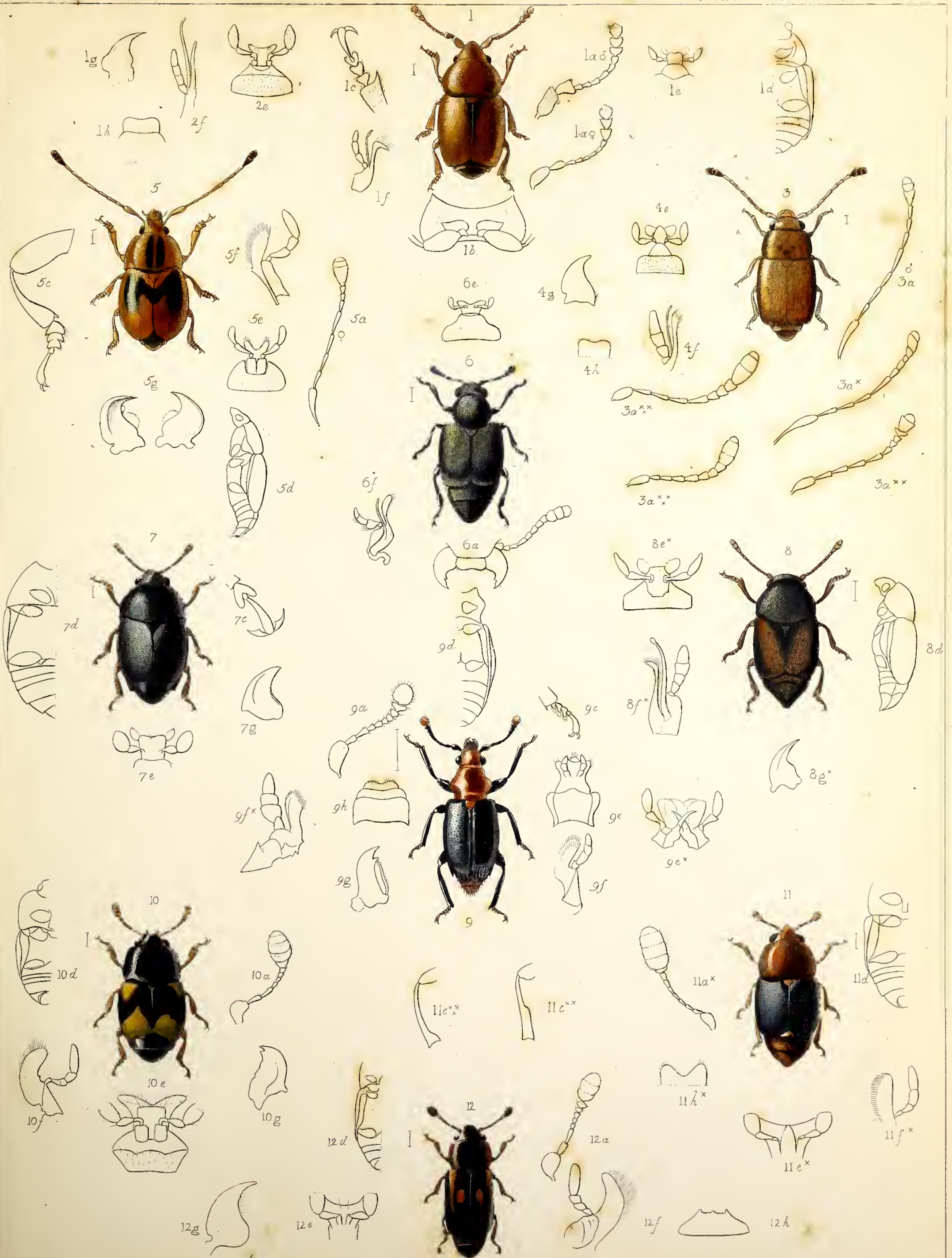
*Note.*—In the following Plates the initials after each figure indicate the artist by whom the figure was drawn.  
J. O. W. signifies Professor Westwood. E. W. R. signifies Mr. Edward W. Robinson. A. M. signifies the Author.  
The engravings have been executed by Mr. Edward W. Robinson; the colouring by Mr. Hart.

### *Figures of the entire Insect.*

- Fig. I. *CERCUS PEDICULARIUS* ♂. (A. M.)  
 III. *MYSTROPS FLAVICANS*. (E. W. R.)  
 V. *MYSTROPS DISCOIDEUS*. (J. O. W.)  
 VI. *BRACHYPTERUS (BRACHYLEPTUS) QUADRATUS*. (J. O. W.)  
 VII. *BRACHYPTERUS GRAVIDUS*. (A. M.)  
 [Pubescence not sufficiently marked.]  
 VIII. *BRACHYPTERUS (BRACHYLEPTUS) TINCTUS*. (E. W. R.)  
 IX. *CALONECRUS WALLACEI*. (J. O. W.)  
 [Pubescence not sufficiently marked.]  
 X. *CARPOPHILUS HEMIPTERUS*. (A. M.)  
 XI. *CARPOPHILUS MELANOPTERUS*. (A. M.)  
 XII. *CARPOPHILUS (ECNOMORPHUS) SEXPUSTULATUS*. (A. M.)

### *Details.*

- |   |  |
|---|--|
| <p>1 a. ♂ <i>Cercus pedicularius</i>. Antenna of male. (A. M.)<br/>         1 a. ♀ ———. Antenna of female. (A. M.)<br/>         1 b. ———. Underside of thorax. (A. M.)<br/>         1 c. ———. Tarsus. (A. M.)<br/>         1 d. ———. Underside of male. (E. W. R.)<br/>         [The separation between the metathoracic epimeron and metathoracic epipleuron has been omitted.]<br/>         1 e. ———. Ligula, membranous lobes, and labial palpi (copied from Sturm). (A. M.)<br/>         [Membranous lobes rather too small.]<br/>         1 f. ———. Maxillary lobes and palpus (copied from Sturm). (A. M.)<br/>         1 g. ———. Mandible. (A. M.)<br/>         1 h. ———. Labrum. (A. M.)<br/>         2 e. <i>Cercus Sambuci</i>. Ligula, membranous lobes, and labial palpi. (A. M.)<br/>         2 f. ———. Maxillary lobes and palpus. (A. M.)<br/>         3 a. <i>Mystrops flavicans</i>. Antenna of male. (A. M.)<br/>         3 a*. <i>Mystrops durus</i>. Antenna of male. (A. M.)<br/>         3 a**. ———. Antenna of female. (A. M.)<br/>         3 a***. <i>Mystrops adustus</i>:—<br/>         (Upper figure) Antenna of male. (A. M.)<br/>         (Lower figure) Antenna of female. (A. M.)<br/>         4 e. <i>Amartus rufipes</i>. Ligula, with membranous lobes and labial palpi. (A. M.)<br/>         4 f. ———. Maxillary lobes and palpus. (A. M.)<br/>         4 g. ———. Mandible. (A. M.)<br/>         4 h. ———. Labrum. (A. M.)<br/>         5 a. <i>Mystrops discoideus</i>. Antenna of female. (A. M.)<br/>         5 c. ———. Leg and tarsus. (J. O. W.)<br/>         5 d. ———. Profile. (E. W. R.)<br/>         [Metathoracic epimeron omitted, and a segment too many in abdomen.]<br/>         5 e. ———. Ligula and labial palpi. (J. O. W.)<br/>         [Membranous lobes of ligula not defined.]<br/>         5 f. ———. Maxilla and palpus. (A. M.)<br/>         5 g. ———. Mandibles. (J. O. W.)<br/>         6 a. <i>Brachypterus (Brachyleptus) quadratus</i>. Mandibles, labrum, and antenna. (J. O. W.)<br/>         6 e. ———. Ligula and labial palpi. (J. O. W.)<br/>         6 f. ———. Maxillary lobes and palpus. (J. O. W.)<br/>         [Ciliation on the margin omitted by engraver.]<br/>         7 c. <i>Brachypterus gravidus</i>. Claws of tarsus. (A. M.)<br/>         7 d. ———. Underside, showing the epimeron, epipleuron, and segments of abdomen of male. (A. M.)<br/>         7 e. ———. Ligula, membranous lobes, and labial palpi. (A. M.)</p> | <p>7 g. <i>Brachypterus gravidus</i>. Mandible. (A. M.)<br/>         8 d. <i>Brachypterus (Brachyleptus) tinctus</i>. Profile. (E. W. R.)<br/>         [Suture separating the metathoracic epimeron from the epipleuron omitted; posterior cotyloid cavities too far back.]<br/>         8 e*. <i>Brachypterus (Brachyleptus) ferrugatus</i>. Ligula, membranous lobes, and labial palpi. (A. M.)<br/>         8 f*. ———. Maxillary lobes and palpus. (A. M.)<br/>         8 g*. ———. Mandible. (A. M.)<br/>         9 a. <i>Calonecrus Wallacei</i>. Antenna. (J. O. W.)<br/>         9 c. ———. Tarsus. (J. O. W.)<br/>         9 d. ———. Underside. (E. W. R.)<br/>         9 e. ———. Ligula, membranous lobes, and labial palpi (as seen by J. O. W.).<br/>         9 e*. ———. Ligula, membranous lobes, and labial palpi (as seen by A. M.).<br/>         9 f. ———. Maxilla and palpus (as seen by J. O. W.).<br/>         9 f*. ———. Maxilla and palpus (as seen by A. M.).<br/>         9 g. ———. Mandible. (J. O. W.)<br/>         9 h. ———. Epistome, clypeus, and labrum. (J. O. W.)<br/>         10 a. <i>Carpophilus hemipterus</i>. Antenna. (A. M.)<br/>         10 d. ———. Underside. (A. M.)<br/>         10 e. ———. Ligula, membranous lobes, and labial palpi (copied from J. Duval, and verified). (A. M.)<br/>         10 f. ———. Maxilla and palpus (ditto). (A. M.)<br/>         10 g. ———. Mandible. (A. M.)<br/>         11 a. <i>Carpophilus languidus</i>. Antenna. (A. M.)<br/>         [By mistake the engraver has put an article too many in the stalk of this antenna. The row of hairs near the end of the club has also been made too distinct.]<br/>         11 c**. <i>Carpophilus antiquus</i>. Posterior tibia. (A. M.)<br/>         11 c***. <i>Carpophilus ferrugineus</i>. Posterior tibia. (A. M.)<br/>         11 d. <i>Carpophilus melanopterus</i>. Underside. (A. M.)<br/>         11 e*. <i>Carpophilus (Urophorus) humeralis</i>. Ligula, membranous lobes, and palpi. (A. M.)<br/>         11 f*. ———. Maxillary lobe and palpi. (A. M.)<br/>         11 h*. ———. Labrum. (A. M.)<br/>         12 a. <i>Carpophilus (Ecnomorphus) sexpustulatus</i>. Antenna. (A. M.)<br/>         12 d. ———. Underside. (A. M.)<br/>         [The engraver has omitted the second short segment of the abdomen and has continued the epipleura past the posterior cotyloid cavities.]<br/>         12 e. ———. Ligula, with the membranous lobe (ill defined) and labial palpi. (A. M.)<br/>         12 f. ———. Maxilla and palpus. (A. M.)<br/>         12 g. ———. Mandible. (A. M.)<br/>         12 h. ———. Mentum. (A. M.)</p> |
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# EXPLANATION OF PLATE XXXIII.

## Figures of the entire Insect.

- Fig. I. CARPOPHILUS MARGINELLUS. (A. M.)  
 II. TETRISUS CHOLEVOIDES. (A. M.)  
 III. CARPOPHILUS (ENDOMERUS) PIGER. (A. M.)  
 IV. STAUROGLOSSICUS TERMINALIS. (A. M.)  
 [Not sufficiently flat nor cuneiform.]  
 V. CARPOPHILUS (UROPHORUS) ADUMBRATUS. (A. M.)  
 VI. EIDOCOLASTUS PLAGIATIPENNIS. (A. M.)  
 VII. HAPTONCUS TETRAGONUS. (A. M.)  
 VIII. CARPOPHILUS (NITOPS) OPHTHALMICUS. (A. M.)  
 IX. COLASTUS (CYLLOPODES) NIGER. (E. W. R.)  
 X. PROSOPEUS SUBÆNEUS. (A. M.)

## Details.

- 1 a. *Carpophilus marginellus*. Antenna. (E. W. R.)  
 1 b. ———. Underside. (A. M.)  
 1 d. ———. Labrum. (A. M.)  
 1 e. ———. Mentum, ligula, its lobes, and the labial palpi. (A. M.)  
 1 f. ———. Maxilla and maxillary palpus. (A. M.)  
 1 g. ———. Mandible. (A. M.)  
 2 a. *Tetrisus Cholevoides*. Antenna. (E. W. R.)  
 2 b. ———. Underside. (A. M.)  
 2 d. ———. Labrum. (A. M.)  
 2 e. ———. Ligula and labial palpi. (A. M.)  
 2 f. ———. Maxillary palpus. (A. M.)  
 2 g. ———. Mandible. (A. M.)  
 3 a. *Carpophilus (Endomerus) piger*. Antenna. (A. M.)  
 3 b. ———. Underside. (E. W. R.)  
 [Too many segments in the abdomen, and otherwise incorrect.]  
 3 e. ———. Mentum, ligula, its lobes, and the labial palpi. (A. M.)  
 3 f. ———. Maxilla and maxillary palpus. (A. M.)  
 3 g. ———. Mandible. (A. M.)  
 4 a. *Stauroglossicus terminalis*. Antenna. (E. W. R.)  
 4 b. ———. Underside. (A. M.)  
 4 d. ———. Labrum. (A. M.)  
 4 e. ———. Ligula and labial palpi. (A. M.)  
 4 f. ———. Maxilla and maxillary palpus. (A. M.)  
 4 g. ———. Mandible. (A. M.)  
 5 b. *Carpophilus (Urophorus) adumbratus*. Underside. (A. M.)  
 6 a. *Eidocolastus plagiatiennis*. Antenna. (A. M.)  
 6 b. ———. Underside. (E. W. R.)  
 [Incorrect in various respects: the second and third segments of the abdomen should be shorter than the rest, and the position of the metathoracic cotyloid cavities is wrong.]  
 6 d. *Eidocolastus plagiatiennis*. Labrum. (E. W. R.)  
 [The emargination too wide, and the lobes not broad nor rounded enough.]  
 6 e. ———. Ligula and labial palpi. (A. M.)  
 6 f. ———. Maxilla and maxillary palpus. (A. M.)  
 6 g. ———. Mandible. (A. M.)  
 7 a. *Haptoncus tetragonus*. Antenna. (E. W. R.)  
 7 b. ———. Underside. (A. M.)  
 7 d. ———. Labrum. (A. M.)  
 7 e\*. ———. Ligula and labial palpi. (A. M.)  
 7 f. ———. Maxilla and maxillary palpus. (A. M.)  
 7 g. ———. Mandible. (A. M.)  
 7 d\*. *Haptoncus pubescens*. Labrum. (A. M.)  
 7 f\*. ———. Maxilla and maxillary palpus. (A. M.)  
 8 a. *Carpophilus (Nitops) ophthalmicus*. Antenna. (E. W. R.)  
 [Pubescence omitted.]  
 8 b. ———. Underside. (A. M.)  
 8 c. ———. Head and eyes. (E. W. R.)  
 8 d. ———. Labrum. (A. M.)  
 8 e. ———. Ligula and labial palpi. (A. M.)  
 8 f. ———. Maxilla and maxillary palpus. (A. M.)  
 8 g. ———. Mandible. (A. M.)  
 9 a. *Colastus (Cyllopes) niger*. Antenna. (E. W. R.)  
 [The club is only three-jointed. The upper segment should be a mere line of hairs.]  
 9 b. ———. Profile. (E. W. R.)  
 [The epipleuron and posterior cotyloid cavity incorrect.]  
 9 c. ———. Anterior tibia and tarsus. (E. W. R.)  
 10 b. *Prosopeus subæneus*. Underside. (E. W. R.)  
 [Incorrect. The second segment of the abdomen is only half the length of any of the rest, which are nearly all equal.]  
 10 e. ———. Ligula and labial palpi. (A. M.)  
 10 f. ———. Maxilla and maxillary palpus. (A. M.)  
 10 g. ———. Mandible. (A. M.)



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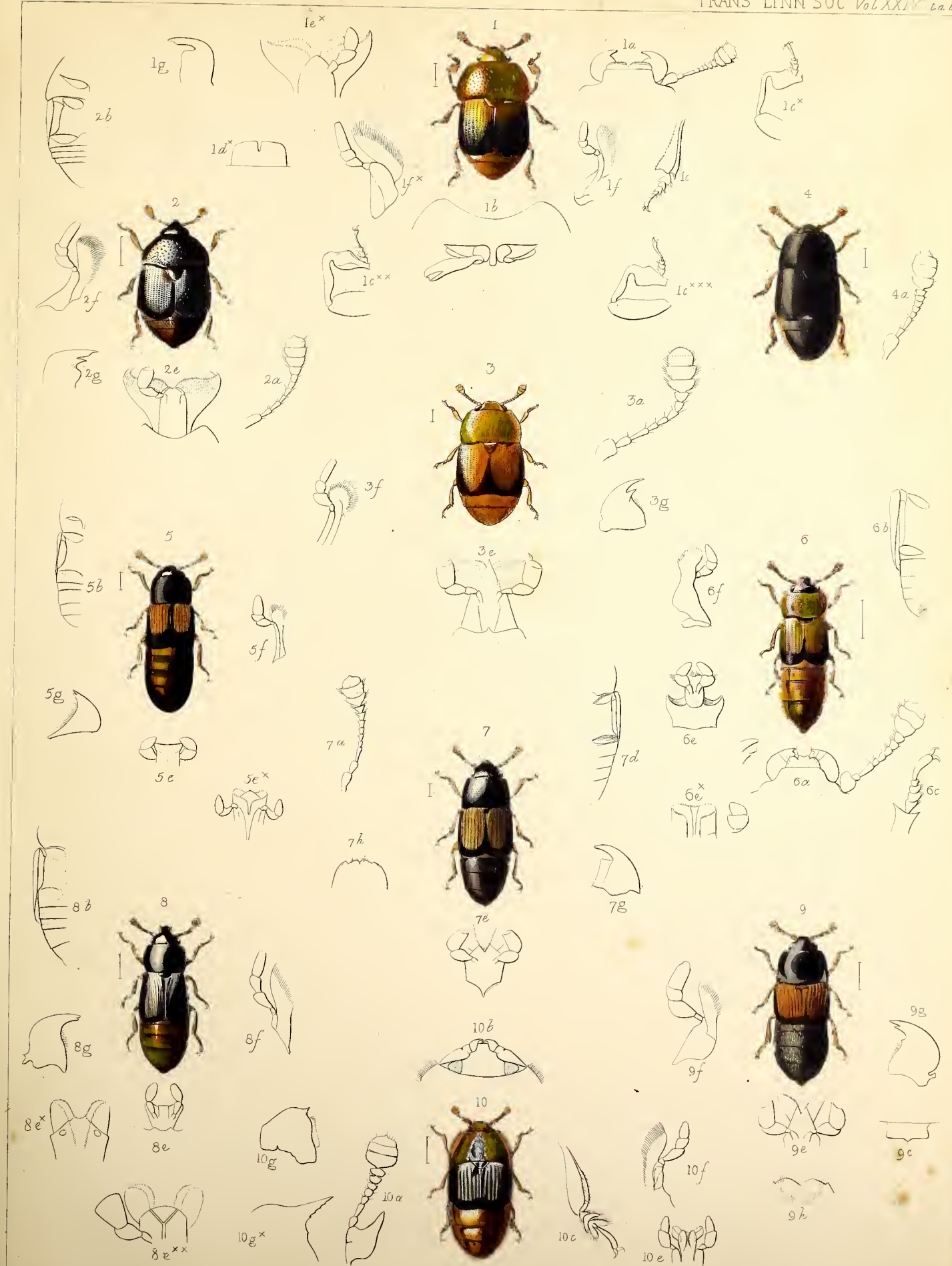
## EXPLANATION OF PLATE XXXIV.

### *Figures of the entire Insect.*

- Fig. I. COLASTUS (CYCLOPODES) POSTICUS. (J. O. W.)  
 II. COLASTUS LATUS. (A. M.)  
     [Pubescence not sufficiently marked.]  
 III. COLASTUS AMPUTATUS. (E. W. R.)  
     [Not flat and shining enough.]  
 IV. COLASTUS OBSCURUS. (E. W. R.)  
     [Pubescence omitted.]  
 V. BRACHYPEPLUS (TASMUS) BINOTATUS. (E. W. R.)  
 VI. BRACHYPEPLUS (LEIOPEPLUS) RUBIDUS. (J. O. W.)  
 VII. BRACHYPEPLUS OMALINUS. (A. M.)  
 VIII. BRACHYPEPLUS (LIPAROEPLUS) COLASTOIDES. (A. M.)  
 IX. BRACHYPEPLUS LOWEI. (A. M.)  
 X. BRACHYPEPLUS (ONICOTIS) AURITUS. (E. W. R.)

### *Details.*

- |   |  |
|---|--|
| <p>1 a. <i>Colastus (Cyllopodes) posticus</i>. Head, labrum, mandibles, and antenna. (J. O. W.)<br/>         1 b. ———. Prothoracic cotyloid cavities. (J. O. W.)<br/>         1 c. ———. Posterior tibia and tarsus. (J. O. W.)<br/>         1 c*. ———. Anterior tibia and tarsus. (A. M.)<br/>         1 f. ———. Maxilla and maxillary palpus. (J. O. W.)<br/>         1 c**. <i>Colastus (Cyllopodes) ruptus</i>. Anterior tibia and tarsus. (A. M.)<br/>         1 c***. <i>Colastus (Cyllopodes) scutellaris</i>. Anterior tibia and tarsus. (A. M.)<br/>         1 d*. ———. Mentum. (A. M.)<br/>         1 e*. ———. Ligula, its membranous lobes, and labial palpus. (A. M.)<br/>         1 g. ———. Mandible. (A. M.)<br/>         2 a. <i>Colastus latus</i>. Antenna. (A. M.)<br/>         2 b. ———. Underside. (A. M.)<br/>         2 e. ———. Ligula, its lobes, and labial palpus. (A. M.)<br/>         2 f. ———. Maxilla and maxillary palpus. (A. M.)<br/>         2 g. ———. Mandible. (A. M.)<br/>         3 a. <i>Colastus amputatus</i>. Antenna. (A. M.)<br/>         3 e. ———. Ligula, its lobes, and the labial palpi. (A. M.)<br/>         3 f. ———. Maxilla and maxillary palpus. (A. M.)<br/>         3 g. ———. Mandible. (A. M.)<br/>         4 a. <i>Colastus obscurus</i>. Antenna. (E. W. R.)<br/>         5 b. <i>Brachypeplus (Tasmus) binotatus</i>. Underside. (A. M.)<br/>         5 c. ———. Ligula, its lobes, and labial palpi (back). (A. M.)<br/>         5 e*. ———. " " (front). (A. M.)<br/>         5 f. ———. Maxilla and maxillary palpus. (A. M.)<br/>         5 g. ———. Mandible. (A. M.)<br/>         6 a. <i>Brachypeplus (Leiopeplus) rubidus</i>. Head, labrum, mandibles, and antenna. (J. O. W.)<br/>         6 b. ———. Underside. (E. W. R.)<br/>         [The proportions of the first and second segments of the abdomen are incorrect.]</p> | <p>6 c. <i>Brachypeplus (Leiopeplus) rubidus</i>. Tarsus. (J. O. W.)<br/>         6 e. ———. Mentum, ligula, and labial palpi. (J. O. W.)<br/>         6 e*. ———. Membranous lobes of ligula more exposed, and articles of labial palpus more magnified. (A. M.)<br/>         6 f. ———. Maxilla and maxillary palpus. (J. O. W.)<br/>         7 a. <i>Brachypeplus omalinus</i>. Antenna. (A. M.)<br/>         7 b. ———. Labrum. (A. M.)<br/>         7 d. ———. Underside. (E. W. R.)<br/>         7 e. ———. Ligula, its lobes, and the labial palpi. (A. M.)<br/>         7 g. ———. Mandible. (A. M.)<br/>         8 b. <i>Brachypeplus (Liparoepplus) Colastoides</i>. Underside. (E. W. R.)<br/>         8 e. ———. Ligula and labial palpi. (A. M.)<br/>         8 f. ———. Maxilla and maxillary palpus. (A. M.)<br/>         [The bearding on the inner side is too thin at the top.]<br/>         8 g. ———. Mandible. (A. M.)<br/>         8 e*. <i>Brachypeplus anceps</i>. Ligula and membranous lobes. (A. M.)<br/>         8 e**. <i>Brachypeplus depressus</i>. Ligula, membranous lobes, and labial palpus. (A. M.)<br/>         9 e. <i>Brachypeplus Lowei</i>. Ligula, its lobes, and labial palpi. (A. M.)<br/>         9 f. ———. Maxilla and maxillary palpus. (A. M.)<br/>         9 g. ———. Mandible. (A. M.)<br/>         9 h. ———. Labrum. (A. M.)<br/>         9 o. ———. Scutellum. (A. M.)<br/>         10 a. <i>Brachypeplus (Onicotis) auritus</i>. Antenna. (A. M.)<br/>         10 b. ———. Head with antennæ at rest. (E. W. R.)<br/>         10 c. ———. Posterior tibia and tarsus. (E. W. R.)<br/>         10 c. ———. Ligula, its lobes, and the labial palpi. (A. M.)<br/>         10 f. ———. Maxilla and maxillary palpus. (A. M.)<br/>         10 g. ———. Mandible. (A. M.)<br/>         10 g*. ———. Tooth at apex of mandible. (A. M.)</p> |
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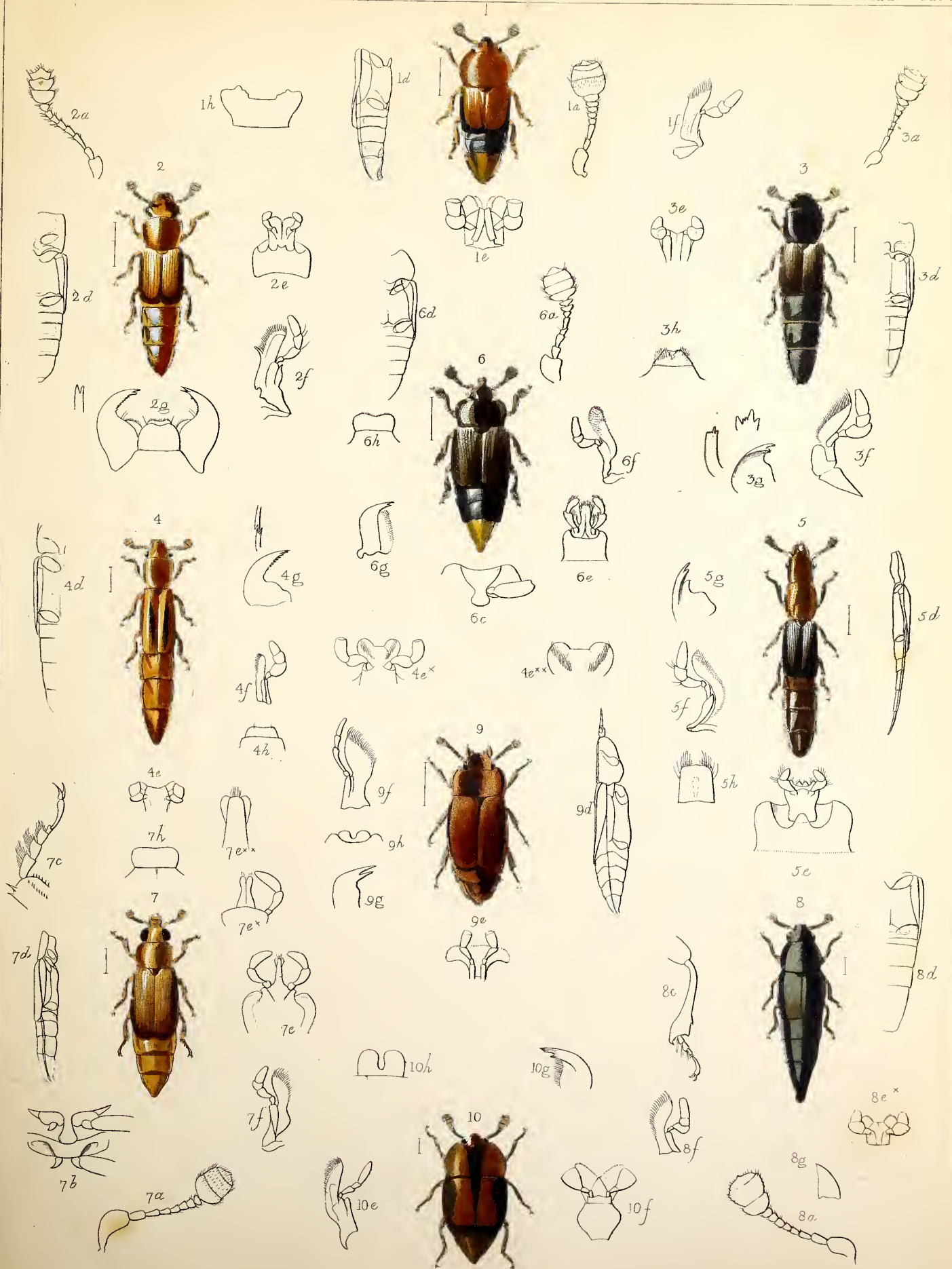
## EXPLANATION OF PLATE XXXV.

### *Figures of the entire Insect.*

- Fig. I. *HALEPOPEPLUS BATESII*. (A. M.)  
 II. *CILLÆUS CASTANEUS*. (J. O. W.)  
 III. *CILLÆUS OBSCURUS*. (E. W. R.)  
 IV. *CILLÆUS LINEARIS*. (J. O. W.)  
 V. *ORTHOGRAMMA FUSCIPENNIS*. (J. O. W.)  
 VI. *HYPODETUS XANTHURUS*. (J. O. W.)  
     [Epistome too narrow.]  
 VII. *MACROSTOLA STRAMINEA*. (J. O. W.)  
 VIII. *CONOTELUS FEMORALIS*. (E. W. R.)  
 IX. *ECNOMÆUS PLANUS*. (A. M.)  
 X. *TETRISUS HYDROPOROIDES*. (E. W. R.)

### *Details.*

- |   |  |
|---|--|
| <p>1 <i>a.</i> <i>Halepopeplus Batesii</i>. Antenna. (E. W. R.)<br/>         1 <i>d.</i> ———. Underside. (A. M.)<br/>         1 <i>e.</i> <i>Halepopeplus bipustulatus</i>. Ligula, its lobes, and the labial palpi. (A. M.)<br/>         1 <i>f.</i> ———. Maxilla and maxillary palpus. (A. M.)<br/>         1 <i>h.</i> ———. Mentum.<br/>         2 <i>a.</i> <i>Cillæus castaneus</i>. Antenna. (J. O. W.)<br/>         2 <i>d.</i> ———. Underside. (E. W. R.)<br/>         2 <i>e.</i> ———. Ligula and labial palpi (as seen by J. O. W.).<br/>         2 <i>f.</i> ———. Maxilla and maxillary palpus. (J. O. W.)<br/>         2 <i>g.</i> ———. Epistome, labrum, and mandibles. (J. O. W.)<br/>         3 <i>a.</i> <i>Cillæus obscurus</i>. Antenna. (E. W. R.)<br/>         3 <i>d.</i> ———. Underside. (E. W. R.)<br/>         3 <i>e.</i> ———. Ligula, its lobes, and labial palpi. (A. M.)<br/>         3 <i>f.</i> ———. Maxilla and maxillary palpus. (A. M.)<br/>         3 <i>g.</i> ———. Mandible. (A. M.)<br/>         3 <i>h.</i> ———. Labrum. (A. M.)<br/>         4 <i>d.</i> <i>Cillæus linearis</i>. Underside. (E. W. R.)<br/>             [The first segment of the abdomen is too small.]<br/>         4 <i>e.</i> ———. Ligula, its lobes, and labial palpi. (A. M.)<br/>         4 <i>e*</i>. <i>Cillæus megacephalus</i>. Ligula, its lobes, and labial palpi. (A. M.)<br/>         4 <i>e**</i>. ———. Membranous lobes of ligula.<br/>             [The ciliation appears to be part of an envelope like that in some of the <i>Brachypepli</i>; for example, figs. 5 <i>e*</i> &amp; 6 <i>e*</i>, Pl. XXXIV.]<br/>         4 <i>f.</i> <i>Cillæus linearis</i>. Maxilla and maxillary palpus. (A. M.)<br/>         4 <i>g.</i> ———. Mandible. (A. M.)<br/>         4 <i>h.</i> ———. Epistome and labrum. (A. M.)<br/>         5 <i>d.</i> <i>Orthogramma fuscipennis</i>. Side view. (A. M.)<br/>         5 <i>e.</i> ———. Mentum, ligula, and labial palpus (as seen by J. O. W.).<br/>             [The two middle projections are probably an error. I have been unable to verify them.—A. M.]<br/>         5 <i>f.</i> ———. Maxilla and maxillary palpus. (J. O. W.)<br/>         5 <i>g.</i> ———. Mandible. (A. M.)<br/>         5 <i>h.</i> ———. Labrum. (J. O. W.)<br/>         6 <i>a.</i> <i>Hypodetus xanthurus</i>. Antenna. (J. O. W.)</p> | <p>6 <i>c.</i> <i>Hypodetus xanthurus</i>. Prosternum. (J. O. W.)<br/>         6 <i>d.</i> ———. Underside. (E. W. R.)<br/>         6 <i>e.</i> ———. Mentum, ligula, and labial palpi.<br/>             [Ligula not correct. See woodcut in text, voc. <i>Hypodetus</i>.]<br/>         6 <i>f.</i> ———. Maxilla and maxillary palpus. (J. O. W.)<br/>         6 <i>g.</i> ———. Mandible. (J. O. W.)<br/>         6 <i>h.</i> ———. Labrum. (J. O. W.)<br/>         7 <i>a.</i> <i>Macrostola straminea</i>. Antenna. (A. M.)<br/>         7 <i>b.</i> ———. Prosternum and mesosternum. (J. O. W.)<br/>         7 <i>c.</i> ———. Anterior tarsus. (J. O. W.)<br/>         7 <i>d.</i> ———. Profile. (E. W. R.)<br/>         7 <i>e.</i> ———. Mentum, ligula, and labial palpi. (A. M.)<br/>         7 <i>e*</i>. ———. Ligula and its lobes seen from the upper side. (A. M.)<br/>         7 <i>e**</i>. ———. Ditto seen from the under side. (A. M.)<br/>         7 <i>f.</i> ———. Maxilla and maxillary palpus. (J. O. W.)<br/>         7 <i>h.</i> ———. Labrum. (J. O. W.)<br/>         8 <i>a.</i> <i>Conotelus femoralis</i>. Antenna. (E. W. R.)<br/>         8 <i>c.</i> <i>Conotelus obscurus</i>. Middle tibia and tarsus. (E. W. R.)<br/>         8 <i>d.</i> ———. Underside. (E. W. R.)<br/>             [Disproportionately broad, and two first segments disproportionately short.]<br/>         8 <i>e*</i>. <i>Conotelus substriatus</i>. Ligula, its lobes, and labial palpi. (A. M.)<br/>         8 <i>f.</i> <i>Conotelus vicinus</i>. Maxilla and maxillary palpus. (A. M.)<br/>         8 <i>g.</i> ———. Mandible. (A. M.)<br/>         9 <i>d.</i> <i>Ecnomæus planus</i>. Side view. (A. M.)<br/>         9 <i>e.</i> ———. Ligula, membranous lobes, and labial palpi. (A. M.)<br/>         9 <i>f.</i> ———. Maxilla and maxillary palpus. (A. M.)<br/>             [Maxilla not sufficiently bearded.]<br/>         9 <i>g.</i> ———. Mandible. (A. M.)<br/>         9 <i>h.</i> ———. Labrum. (A. M.)<br/>         10 <i>e.</i> <i>Tetrisus hydroporoides</i>. Maxilla and maxillary palpus. (A. M.)<br/>         10 <i>f.</i> ———. Ligula, its lobes, and labial palpi. (A. M.)<br/>         10 <i>g.</i> ———. Mandible. (A. M.)<br/>         10 <i>h.</i> ———. Labrum. (A. M.)</p> |
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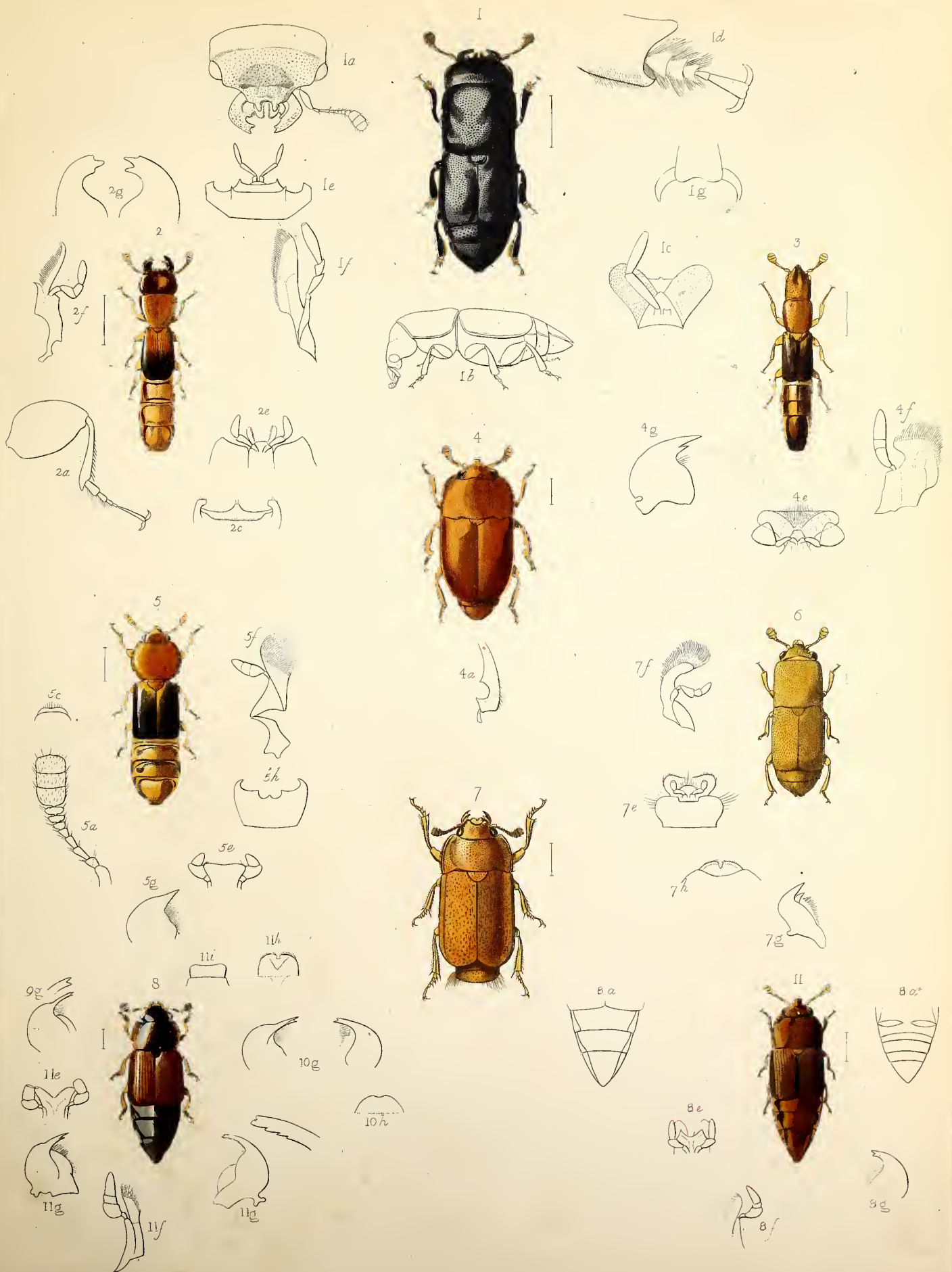
## EXPLANATION OF PLATE XXXVI.

### *Figures of the entire Insect.*

- Fig. I. *Ctilodes Bostrichoides*. (A. M.)  
 II. *Ithyphenes Gnatho*. (A. M.)  
 III. *Orthogramma Longiceps*. (E. W. R.)  
 IV. *Trimenus Adpressus*. (A. M.)  
 V. *Adocimus Bellus*. (A. M.)  
 VI. *Carpophilus cylindricus*. (E. W. R.)  
 VII. *Somaphorus ferrugineus*. (J. O. W.)  
 VIII. *Campsopyga pallidipennis*. (E. W. R.)  
 XI. *Brachypeplus (Selis) cuneatus*. (A. M.)

### *Details.*

- |   |  |
|---|--|
| 1 <i>a.</i> <i>Ctilodes Bostrichoides</i> . Head, mandibles, labrum, and antenna. (A. M.)   | 5 <i>g.</i> <i>Adocimus bellus</i> . Mandible. (A. M.)   |
| 1 <i>b.</i> ———. Profile. (A. M.)   | 5 <i>h.</i> ———. Mentum. (A. M.)   |
| [The two first segments of abdomen omitted by engraver.]                                    | 7 <i>e.</i> <i>Somaphorus ferrugineus</i> . Ligula and labial palpi. (J. O. W.)                  |
| 1 <i>c.</i> ———. Ligula, its lobes, and labial palpi. (A. M.)                               | 7 <i>f.</i> ———. Maxilla and maxillary palpus. (J. O. W.)  |
| [The first minute article omitted by the engraver.]   | 7 <i>g.</i> ———. Mandible. (J. O. W.)  |
| 1 <i>d.</i> ———. Anterior tarsus. (A. M.)   | 7 <i>h.</i> ———. Labrum. (J. O. W.)  |
| 1 <i>e.</i> ———. Mentum and labial palpi. (A. M.)   | 8 <i>a.</i> <i>Campsopyga pallidipennis</i> . Exposed dorsal segments of abdomen. (A. M.)        |
| 1 <i>f.</i> ———. Maxilla and maxillary palpus. (A. M.)                                      | 8 <i>a</i> *. ———. Underside of abdomen. (A. M.)   |
| 1 <i>g.</i> ———. Claw of anterior tarsus. (A. M.)   | 8 <i>e.</i> ———. Ligula, its lobes, and labial palpi. (A. M.)                                    |
| 2 <i>a.</i> <i>Ithyphenes gnatho</i> . Posterior leg. (A. M.)                               | 8 <i>f.</i> ———. Maxilla and maxillary palpus. (A. M.)   |
| 2 <i>c.</i> ———. Mentum. (A. M.)  | 8 <i>g.</i> ———. Mandible. (A. M.)   |
| 2 <i>e.</i> ———. Ligula, its lobes, and labial palpi. (A. M.)                               | 9 <i>g.</i> <i>Brachypeplus (Selis) apicalis</i> . Mandible. (A. M.)                             |
| 2 <i>f.</i> ———. Maxilla and maxillary palpus. (A. M.)                                      | 10 <i>g.</i> <i>Brachypeplus (Selis) caudalis</i> . Mandibles. (A. M.)                           |
| 2 <i>g.</i> ———. Mandibles. (A. M.)   | 10 <i>h.</i> ———. Labrum. (A. M.)  |
| 4 <i>e.</i> <i>Trimenus adpressus</i> . Ligula, membranous lobes, and labial palpi. (A. M.) | 11 <i>e.</i> <i>Brachypeplus (Selis) cuneatus</i> . Ligula, its lobes, and labial palpi. (A. M.) |
| 4 <i>f.</i> ———. Maxilla and maxillary palpus. (A. M.)                                      | 11 <i>f.</i> ———. Maxilla and maxillary palpus. (A. M.)  |
| 4 <i>g.</i> ———. Mandible. (A. M.)  | 11 <i>g.</i> ———. Mandibles (right and left). (A. M.)  |
| 5 <i>a.</i> <i>Adocimus bellus</i> . Antenna. (A. M.)                                       | 11 <i>h.</i> ———. Labrum. (A. M.)  |
| 5 <i>c.</i> ———. Labrum. (A. M.)  | 11 <i>i.</i> <i>Campsopyga pallidipennis</i> . Labrum. (A. M.)                                   |
| 5 <i>e.</i> ———. Ligula and labial palpi. (A. M.)   |  |
| 5 <i>f.</i> ———. Maxilla and maxillary palpus. (A. M.)                                      |  |
| [Beard of maxilla rather too long.]   |  |



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